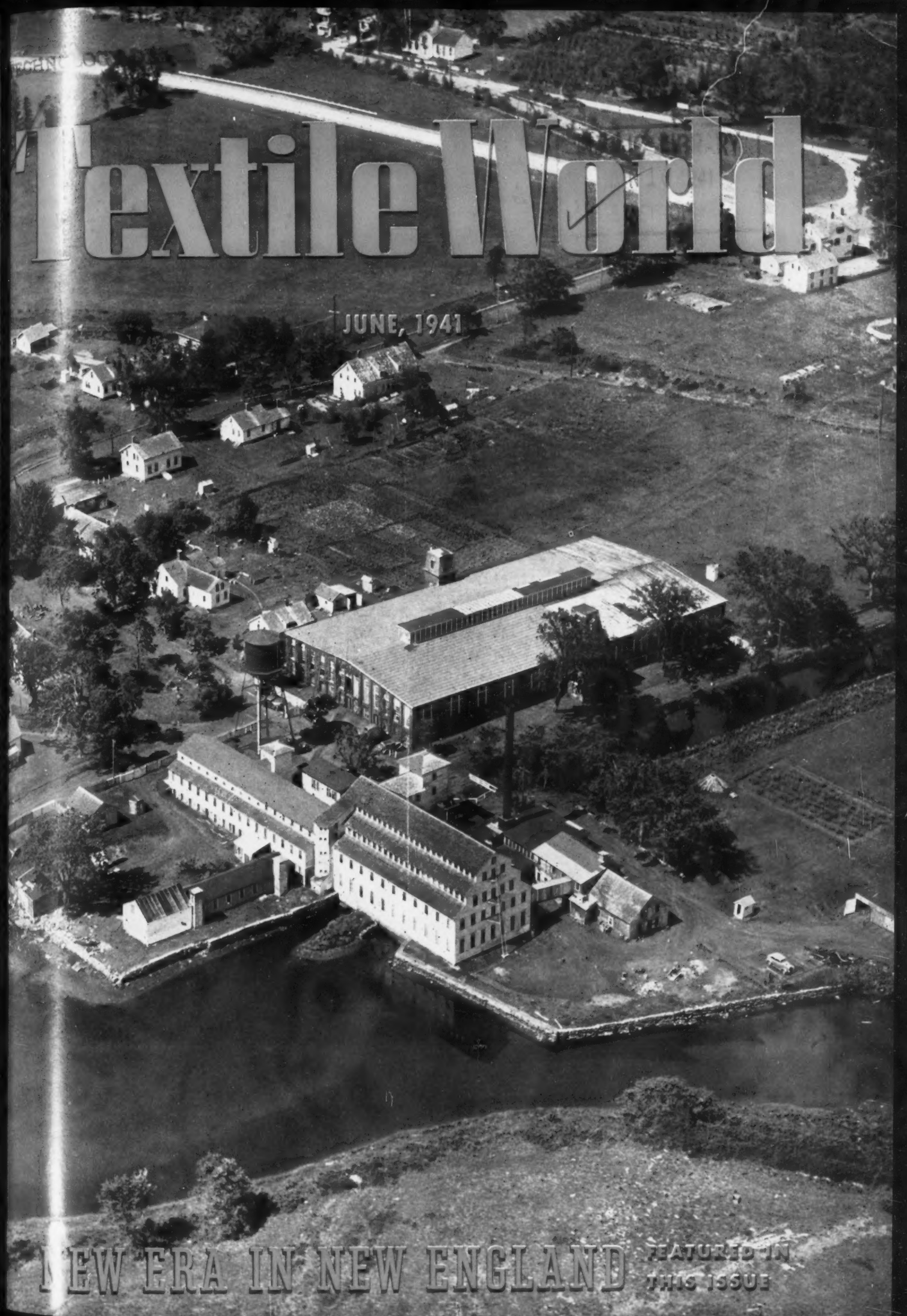
Textile World

JUNE, 1941



NEW ERA IN NEW ENGLAND FEATURED IN THIS ISSUE

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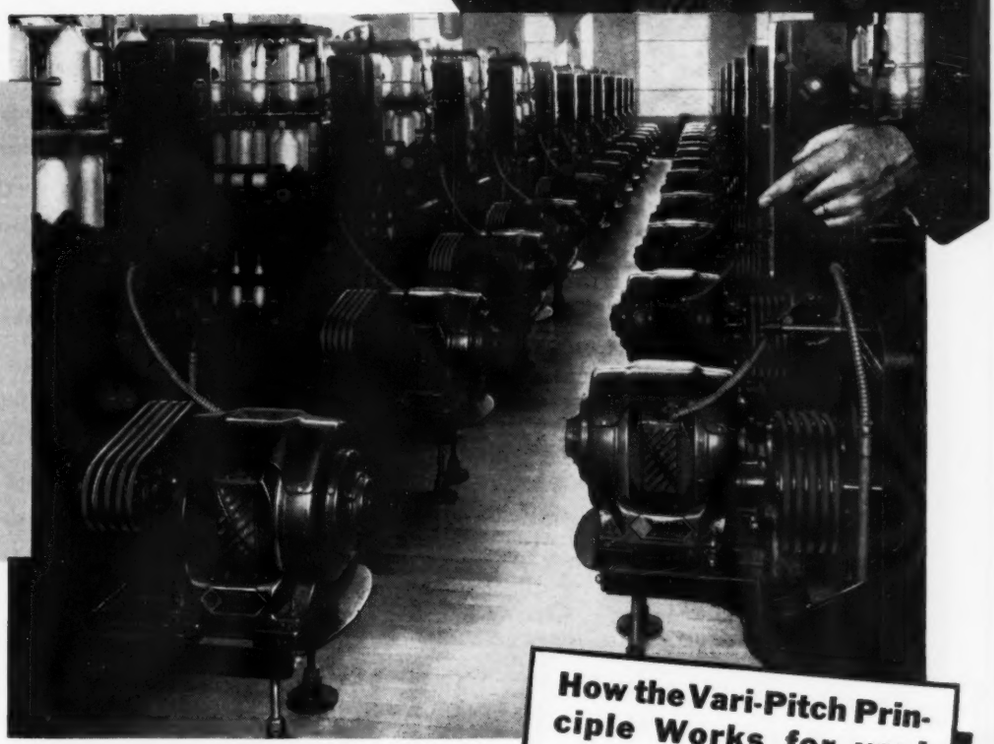

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The Machine Builder Takes the Risk

Comments by Henry G. Lord

During the last fifty years I have followed the invention and development of hundreds, yes, thousands of textile machines, auxiliary equipment and devices and revolutionary changes in the dyeing and finishing processes.

There never could be any figures available to show the millions of dollars and centuries of time which have been spent in the development of these things before they were offered to the textile manufacturer. The builder takes the risk! There is usually close collaboration with the mill man who is sometimes the inventor, but more often it is the machine builder who is the originator of the new development and the suggester of possible improvements, and he pays the bills for bringing the idea to its completed stage and ready for mill use.

When I think of the time and money spent in the development of the automatic loom, the drawing-in machine, the automatic spooler and high-speed warper, automatic winders, automatic knitting machines, long-draft roving and spinning, large-package ring and mule machines for woolen yarns; the revolutionary changes in scouring, dyeing, and finishing machines; and hundreds of accessory machines and equipment. I sometimes wonder if the profits on the comparatively few successes have offset the millions of dollars that have been spent in research, experimentation and practical work-outs on them and the vastly more failures, before the final successful products were offered to the mills.

I was reminded of that the other day when I noted the sale of the Queen City Cotton Co. at Burlington. I think Bristow Draper, President of the Draper Corporation, served his apprenticeship in that mill and rose to superintendent before going back to Hopedale. If I am not mistaken, the building of this mill by the Draper family, was largely inspired by the determination to try out, under actual mill conditions, large groups of the revolutionary automatic bobbin-changing looms they were developing. There had been previous mill tests of small sets of these looms in Fall River and several other places, but it was at Queen City in 1894 that the first large group of looms was put out for trial before they were offered for general sale. It was also at Queen City that the new X Model looms were given their first real try-out.

While I do not recall another instance of a mill having been built as a proving ground for new machinery, I think this is only a large-scale illustration of thousands of working try-outs, before the tested product is offered to the manufacturer who may have every assurance that it will do the job, for the machine builder has taken the risk and proved it would.

HENRY G. LORD, *founder of Textile World and president, Bragdon, Lord & Nagle Division, McGraw-Hill Publishing Co.*

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FRONT COVER

Airplane view of Hamilton (R. I.) Web Co. taken by Thomas M. J. Boyle, photographer, of Providence, typifies a class of New England textile mill and its surroundings. This issue contains special features on the textile industry in New England, beginning on page 73.

TEXTILE WORLD held an editorial staff conference last month during which our photographer snapped the adjoining picture. From left to right: Howard P. Galloway, assistant editor; Earle Mauldin, southern editor; William G. Ashmore, southern editor; Blaine Stubblefield of our Washington office; Douglas G. Woolf, chief editor; William B. Dall, managing editor; Winn W. Chase, associate editor; Gordon B. M. Walker, assistant editor; C. G. Smith, art director. H. S. Knowlton, New England editor, was absent when photo was made.

TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

Where Were You on the Afternoon of May 16?

SOMETHING HAPPENED in textile research on the afternoon of May 16. You, Mr. Textile Manufacturer, may not have been there, but what occurred then is of tremendous importance to your future. True, it is only a beginning, but you can't get anywhere until you start.

Specifically, a working arrangement between the Textile Foundation and the U. S. Institute for Textile Research was put into effect, with Edward T. Pickard the key-man, as secretary of both organizations. (See page 56 of this issue for details.)

Let's clear the atmosphere on the subject of research. To too many textile men, it is an abstraction—something to do with test-tubes and laboratories, but not a part of their practical problems of running a mill and making money.

That's where they make their primary mistake. Research is a dollars-and-cents proposition, possibly the most remunerative of all forms of manufacturing endeavor.

It is the only real cushion against technical and economic change. If an all-out research program had been in effect in this industry since 1920, there would not have been the drastic effect of the inroads upon textile markets by paper, jute, plastics and what have you. Great old textile firms would not have gone into the corporate graveyard.

But it is not too late. In fact, real research is more important today than ever before. The changes ahead will be far more drastic than any that have happened in the past.

Just to mention one: The possibility of completely synthetic fabrics, by-passing the spinning frame and the loom, is now to a limited extent an actuality. We warned you about this ten years ago, and have produced continuous evidence since then. Eventually, the "limited" extent may become a "full" extent.

It is not within the power even of research to stop these trends. But it *is* within the power of research to adjust the industry to them, so that the same firms which are making the textile fabrics and textile machines of today, may, if they keep alert, make the fabrics and machines of tomorrow.

IF YOU DOUBT that research is a dollars-and-cents matter, consult the record of industries which have grown up, through research, in the last 40 years—and which, through research, are commanding more and more of the consumer's dollar, usually at the expense of textiles.

If you want a personal testimony, ask—for example—Franklin W. Hobbs. No one would deny that he, as president of the Arlington Mills, is a practical man. And yet he has devoted much of his time during the last 11 years to his duties as chairman of the Textile Foundation.

Ask any of the other men who have spent time and money trying to make research *work* for the textile industry. Ask Dr. Robert E. Rose, Dr. Harold DeWitt Smith, Dr. E. H. Killheffer, Fessenden S. Blanchard, Charles H. Clark, Dr. Louis H. Olney, Dr. Warren Emley, Fuller E. Callaway, Jr., Donald Comer, Frank Cheney, and a score of others.

And ask this writer. He has spent more of his own time and of TEXTILE WORLD's money during the last 25 years on this research problem than on any one phase of textile manufacture.

At long last, all of us see a promise of a real research program.

BUT, as we indicated above, we have only just started. There is work ahead. First, there is need of more memberships—hundreds, in fact thousands—in the U. S. Institute, in order to make this truly an enterprise of the industry as a whole. Those of us on the special committee which has brought this effort to its present stage, will ring your door-bell, via the postman.

Second, there is the need of a real program. That, too, the special committee will develop, for later submission to the industry as a whole, at the annual meeting of the Institute in November. Take the word of this writer that the proposal will be a good one. It has behind it the combined forces of the Foundation and the U. S. Institute.

All of this is going to take personal money and effort and sacrifice. There is no textile Santa Claus. In a world gone mad, there is a commanding reason for sweat and toil.

And through research and its application there is the promise of averting the shedding of economic blood, at least.

That, to this writer, seems well worth the price of admission.

"Unlimited Emergency"

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THE EDITOR SAYS

Bombs Over U. S.

"Some people seem to think that we are not attacked until bombs actually drop on New York or San Francisco or New Orleans or Chicago. But they are simply shutting their eyes to the lesson we must learn from the fate of every nation that the Nazis have conquered. . . . The attack on the United States can begin with the domination of any base which menaces our security—North or South. . . . We know enough by now to realize that it would be suicide to wait until they (the dictators) are in our front yard. When your enemy comes at you in a tank or a bombing plane, if you hold your fire until you see the whites of his eyes, you will never know what hit you. Our Bunker Hill of tomorrow may be several thousand miles from Boston."

Those few sentences from President Roosevelt's historic address on May 27 answer all the questions raised by the minority group which feels that this isn't our war, and that all we have to do, to be safe, is to keep out of it.

We *can't* keep out of it. We're in it. We've been in it for a long, long time. We couldn't have kept out of it even if the Lindberghs and the Wheelers had been running the Government. If we had dug a hole, and crawled into it, and pulled the hole in after us, we'd have found the Nazis right there with us, and with bombs.

That is the important fact for all of us to keep clear in our minds. No one has forced us into this war, except Hitler—and he has forced the whole world into it.

The Zero Hour for America, which we said in these columns last month was approaching, is now here.

The President has declared an unlimited national emergency and the country is back of him. That means defense first, for all of us, whether as individuals or as company executives or as labor-union officials.

It means that no real American will question now the role we have elected—or rather been forced—to play.

The only limit is the reservation of the right to criticize the manner in which our part in the war is performed. War, in a democracy, does not mean a suppression of that right. In fact, successful prosecution of the war depends upon the assertion of it. That is what has kept England going, since Churchill came into power. And if the British people, bombed nightly out of their beds, can still retain that freedom and ask their Government "what the hell?", then we in this country can do no less.

This writer will continue to raise questions regarding the conduct of the emergency. If he recognizes tactics which will weaken our economy, such as those of Leon Henderson analyzed on this same page, he will say what he thinks—until he is muzzled—and we hope that time will not come to any sincere editorial observer. For a strong national economy is the only sure basis for victory.

* * *

Once again, for the second time in the lives of many of the readers of TEXTILE WORLD, the textile industry is called upon to play its part in protecting the nation against attack. It will not, must not, can not, falter.

This time, the bombs will be over the United States. What lies ahead is unpredictable, except that it will be bad. May God give us the courage and the wisdom to halt the dictators in their mad task of hurling the world to destruction!

The Freezing of Combed Yarn Prices

Leon Henderson's arbitrary freezing of combed cotton yarn prices at a level approximately 20% below current market represents a type of Government dictatorship which, if not checked now, will destroy the free system of business enterprise by which this country has become great. Buyers of combed yarns have as much to lose as have sellers, because—once started—such a bureaucratic control cannot stop; it must carry on into the field of woven and knitted fabrics, and then into the field of their further fabrication into apparel.

The irony of the situation rests in the fact that the same Administration which is now holding up its hands in horror at inflationary trends in textile products, has for years fostered such inflation in the basic costs entering into the manufacture of those products. Through every device known to man, it has been pumping air into raw-material prices, in the face of the loss of a world market for American cotton, for which loss the Administration's policies have been largely responsible.

Similarly, there has been a long chain of projects, initiated by this same Administration, whose objective was inflation in textile wages.

These two pressures toward inflation—in raw material and in labor costs—continue unabated.

More than that, the present situation in combed yarns is a direct result of unwise purchasing policies on the part of another branch of the Government: the Quartermaster Corps. Starting a year ago, Army specifications called for the use of combed yarn, for both knitted and woven fabrics, to a degree never before contemplated. Invitations for bids on such fabrics were for quantities and for delivery dates far beyond the capacity of the industry to produce. Not only did this *force* an element of speculative interest upon the market—but, when the yarn mills tried to keep up with the procession, they entailed additional cost, through time-and-a-half for overtime under the wage-hour law, which has represented an important factor in rising yarn prices.

And yet, when signs of inflation appeared, the Administration, through Mr. Henderson's division, known familiarly as OPACS, moves to protect the dear public, the same public which has been gouged by a fantastic agricultural policy and by submission to the demands of a pressure group in organized labor.

The answer of course is easy. Agriculture and organized labor are protected interests; industry is merely fair game for economic theorists.

And that aptly describes the group in OPACS. There is a bunch of bright boys, who undoubtedly could pass the stiffest exams in abstract economics, but who know nothing about the practical impact of price changes upon the workings of a presumably free economic system.

OPACS would probably answer that yarn producers were called into conference and given their "chance." Actually, the conferences were of the "When are you going to stop beating your wife?" type. Price movements within a decentralized industry can't be turned off and on that way. If the only answer is a dictum from one man, supported by his bright boys, then American freedom has already been lost in this undeclared war.

We're Almost in a Shooting War

Washington knows it, but the rest of the country is playing ostrich game

By DOUGLAS G. WOOLF

Editor's Note: **This piece was written before the President's declaration of an unlimited national emergency. A post-script follows it.**

A TRIP TO WASHINGTON these days is, at one and the same time, a frightening, maddening, inspiring, discouraging, and baffling experience. Although this writer has practically commuted there during the last eight years, each trip is novel—and the most recent visit, late last month, was the most soul-stirring of all.

This is his net conclusion: Either Washington is screwy, or the majority of the people in the country at large are playing the ostrich game. This writer believes the latter to be nearer the truth.

The best Washington opinion—and we say "best" advisedly, because it includes men of all shades of political beliefs, and in all types of jobs, big shots and little fellows—recognizes that we are on the verge of a shooting war. It even admits the possibility that we may have some "unwelcome visitors" before this year is over.

The country as a whole still regards this emergency as a defense program, involving higher wages and bigger volume of business, but entailing little actual risk.

Somehow or other, these two divergent views should be brought closer together. If Washington is wrong, then we should stop mortgaging our future; if vox populi is wrong, then we should get wise to the fact that we are not playing a war-game, but are facing the most crucial moment in American history—with men, not merely money and material, at stake.

Again, this writer believes the latter to be nearer the truth.

With that as a background, here are some further impressions gained from our latest trip to Washington:

1. The defense program is far from being in high gear. It has been described recently as just getting into second. We doubt that. We think it is still in low.

2. Somehow or other, a new sense of push must be infused into OPM. Almost without exception in the past, it has been proved that the men who start on an uncharted course eventually reach a stage where the magnitude of the task and the routine of its execution come into conflict. That amounts to a stymie. OPM gives evidences, to this writer, of being stymied right now. What is needed is administration, without fear of consequences, or of politics, or of conflict with any pressure group. The administrator of OPM should be responsible nominally to the President, but actually to no one except his God and his self. Knudsen is the logical man. But he should be given complete and unquestionable power. This is primarily an industrial war. It can't be won by a dual control, labor politics notwithstanding.

3. It's time that the people of this country were made to realize that they are going to pay and pay and pay in dollars, and in standard of living. The Treasury Department knows that. But the people don't. They are now spending the income from the defense program. What they are going to use next year, and the year after that, and many years after that, for tax dollars, no one knows. And yet they have to be forthcoming in greater and greater volume.

4. If we are *going* to run industry from Washington—and probably that is necessary—let's not have Leon Henderson do the job. And yet, that is just what is happening today. The man who fixes prices is the man who runs industry. Anyone who wants Henderson in that role can have him. This writer doesn't.

5. Somehow or other, it must be realized that we *are* in a war. Personally, this writer favors declaration of war. The alternative is to wait until it suits Hitler to declare war on us. For God's sake, let's be the first country that wasn't a little too late in dealing with Hitler. We almost are too late, now. But if we act within the next few weeks, we may still save what the great majority of the American people think is worth saving—American freedom. Those who, because of other affiliations, don't want to see American democracy survive, can be made comfortable in concentration camps.

That is shooting talk, we admit, but we are practically in a shooting war.

And as long as we are "practically" in it, let's be actually in it. *Because a state of war brings action, as nothing else does.* And how we need action!!

P. S. Since the above was written, the President has spoken, and the country, as well as what is left of the democracies of the world, applauds his assertion of leadership. This writer wishes that, in addition to declaring an unlimited national emergency, the President had announced his intention of asking Congress to declare that a state of war exists between this country and the enemies of freedom. We believe the Congress would endorse such a position. But undoubtedly the President was right in by-passing debate and utilizing the powers available to him. But we are confident that the further step will be taken soon. To repeat, a state of war is the only means toward all-out defense.

★

Bigger Army Probable

The following dispatch is from our Washington office:

While it is felt by defense officials that the President's proclamation of unlimited emergency may not imply immediate increase of military manpower, nevertheless the proclamation does nullify the authorized maximum of 1,418,000 men. The President under emergency laws now can call any number of men he chooses. The possibility that he will call for a bigger Army is supported by military opinion that more should be put in training now, whether they are to be used soon or not, so that their service period can be lengthened to more than a year if necessary, to enable them to handle mechanized equipment. The profession of soldier takes much more time to learn than it used to take. Then too, the service term of men now in training might be lengthened for the same reason, which would create a large standing force. Engineers close to cantonment construction say that plans for 4,000,000 men are already under way. If an increased Army is called for, opinion is that attempt will be made to meet textile needs without plant expansion.

Plan to Vitalize Textile Research

Working arrangement effected between Textile Foundation and U. S. Institute

AFTER MONTHS OF STUDY by a special joint committee representing the Textile Foundation and the U. S. Institute for Textile Research, a plan for a broader and more aggressive research program in the textile industry has been developed and put into effect. As announced at the postponed annual meeting of the Institute, held in New York May 16, the plan calls for a closer association between it and the Foundation. Although remaining completely independent, the two organizations will have a close working arrangement through a common full-time executive. Edward T. Pickard, who has been secretary of the Foundation since its formation in 1930, has been elected executive secretary of the Institute and will devote his full time to the Foundation and the Institute, resigning his position with the U. S. Department of Commerce where for nearly 20 years he has been chief of the Textile Division.

Other officers elected by the Institute at its annual meeting were: Fessenden S. Blanchard, of Pacific Mills, New York, president; Fuller E. Callaway, Jr., Callaway Mills, La Grange, Ga., and Dr. Robert E. Rose, of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., vice-presidents; Dr. Harold DeWitt Smith, of the A. M. Tenney Associates, New York, treasurer.

The special committee which developed the plan was composed of Franklin W. Hobbs, Frank D. Cheney, and Donald Comer, directors of the Foundation, acting for that body, with Mr. Pickard; and Mr. Blanchard, Dr. Rose, Dr. Smith, and Douglas G. Woolf, editor of TEXTILE WORLD, acting for the Institute.

THE IMPORTANT FEATURE of the new plan is that the Foundation, organized by Congress to promote textile research, will have in the Institute, which is a membership body of technical men and executives in the textile industry, a channel for the transmission of the results of its scientific and economic research to that industry. The Foundation has recognized the desirability of broadening its base of operations as well as the need more fully to inform the textile public of the developments made under its research projects, Mr. Hobbs, chairman, stated in a message to the Institute's meeting. With the new set-up, he added, the Foundation will accelerate and extend its activities, confidently expecting that out of the arrangement with the Institute will be developed a virile organization to carry

AT HEAD-TABLE of annual meeting of U. S. Institute for Textile Research above, left to right: Edward T. Pickard, secretary of Textile Foundation, also elected secretary of Institute; Douglas G. Woolf, editor of TEXTILE WORLD, member of special committee which developed new plan, and elected director and member of executive committee; Fessenden S. Blanchard, Pacific Mills, elected president of the Institute; Dr. Louis A. Olney, Lowell Textile Institute, who presided as acting president; W. D. Appel, Bureau of Standards, chairman of Institute's Research Council. . . . Picture at left, also reading left to right, Dr. Robert E. Rose, E. I. du Pont de Nemours & Co., elected vice-president; Ephraim Freedman, R. H. Macy & Co., who reported for nominating committee; Dr. Warren E. Emley, Bureau of Standards.

on textile research when the funds of the Foundation are exhausted, some years hence.

The headquarters of the Foundation will continue in Washington but will be moved to Room 225, Industrial Building, National Bureau of Standards. This move will permit closer administration of the work conducted at the Bureau by 15 Foundation research fellows. Headquarters office of the Institute will be moved from Boston to New York, exact location to be announced shortly. The headquarters office of the Foundation will serve as the Washington branch of the Institute, and vice versa.

The executive committee of the Institute, as named by the directors, includes in addition to the officers and the chairman of the research council, W. D. Appel, the following: John Bancroft, Jr., Joseph Bancroft & Sons Co.; Earl Constantine, National Association of Hosiery Manufacturers; Alban Eavenson, Eavenson & Levering Co.; Edward R. Swarz, Massachusetts Institute of Technology; Douglas G. Woolf, editor of TEXTILE WORLD.

Directors elected at the meeting include: Dr. Smith, Mr. Bancroft, Mr. Callaway, Mr. Constantine; W. M. McLaurine, American Cotton Manufacturers Association; D. H. Powers, Rohm & Haas Co.; Dr. Rose; Albert C. Walker, Bell Telephone Laboratories; and Mr. Woolf.

The other directors of the Institute are: Arthur Besse, president, National Association of Wool Manufacturers; H. M. Chase, research director, Riverside & Dan River Cotton Mills; D. E. Douty, president, U. S. Testing Co., Inc.; Russell T. Fisher, president, National Association of Cotton Manufacturers; Ephraim Freedman, Bureau of Standards, R. H. Macy & Co.; H. Grandage, vice-president, Clark Thread Co.; Edward R. Schwarz, Massachusetts Institute of Technology, W. D. Appel, Bureau of Standards; Mr. Blanchard; F. Bonnet, American Viscose Corp.; Erb N. Ditton, Gotham Silk Hosiery Co.; Alban Eavenson; Ernest N. Hood, treasurer, Old Colony Mfg. Corp.; Louis A. Olney, Lowell Textile Institute; A. M. Tenney, president, A. M. Tenney Associates.

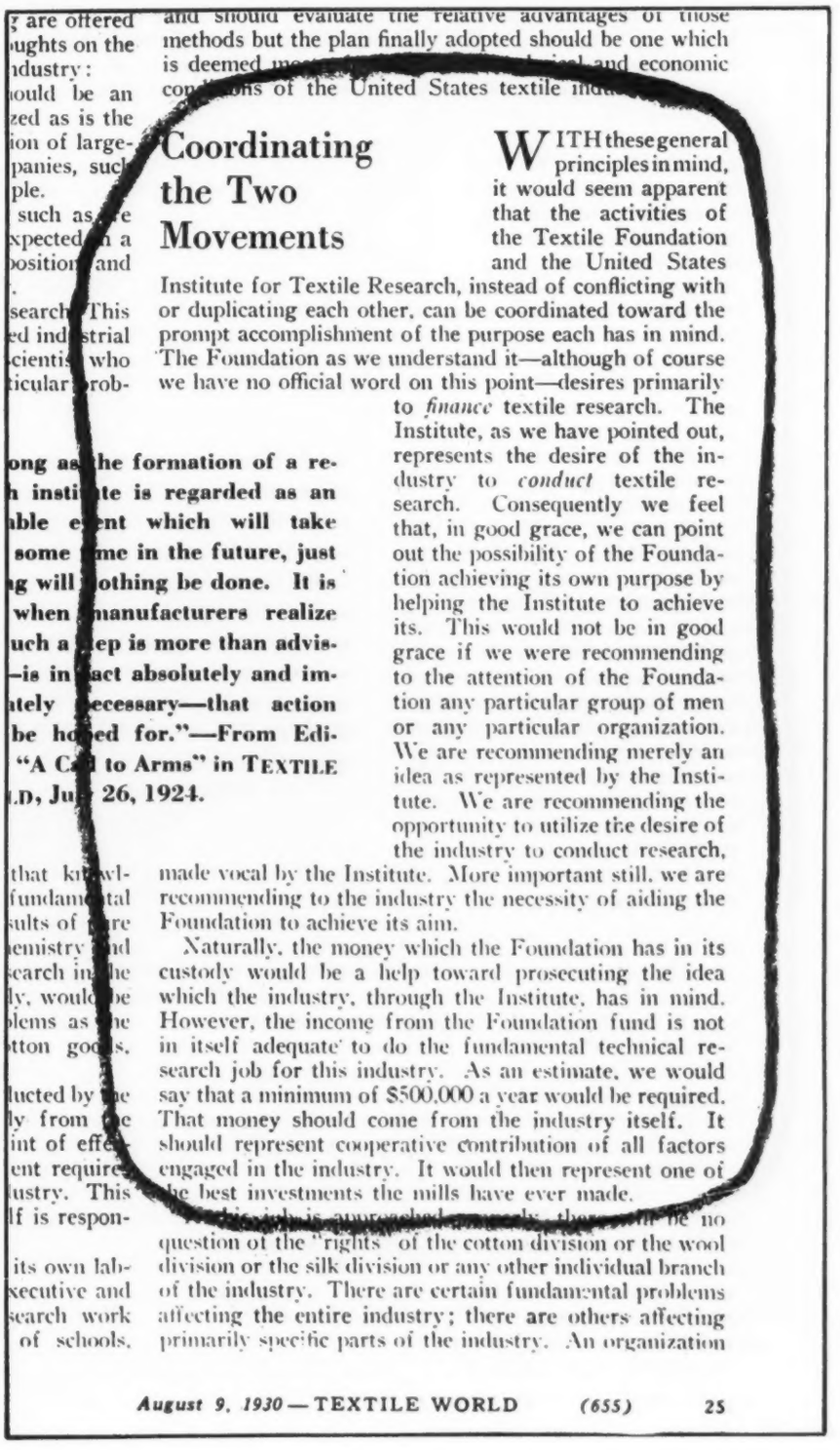
The directorate of the Foundation includes, in addition to the three industry members named above, the Secretary of Agriculture, Claude R. Wickard, and the Secretary of Commerce, Jesse H. Jones.

An enthusiastic market luncheon to mark the launching of the new research plan and to honor Mr. Pickard was held in New York on May 27 under the auspices of the Textile Square Club with representative attendance.

1930-1941

Prophecy of 1930 becomes reality in 1941

THE FOLLOWING is a reproduction of part of an article from the Aug. 9, 1930 issue of TEXTILE WORLD by Douglas G. Woolf, editor. It is of particular interest now because the suggestion made by Mr. Woolf in 1930, for the coordination of the activities of the Textile Foundation and the U. S. Institute for Textile Research, has at long last been made effective. Planning for research—like research itself—is slow business, but in this case it has also been sure.



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and should evaluate the relative advantages of those methods but the plan finally adopted should be one which is deemed
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Coordinating the Two Movements

WITH these general principles in mind, it would seem apparent that the activities of the Textile Foundation and the United States Institute for Textile Research, instead of conflicting with or duplicating each other, can be coordinated toward the prompt accomplishment of the purpose each has in mind. The Foundation as we understand it—although of course we have no official word on this point—desires primarily to *finance* textile research. The Institute, as we have pointed out, represents the desire of the industry to *conduct* textile research. Consequently we feel that, in good grace, we can point out the possibility of the Foundation achieving its own purpose by helping the Institute to achieve its. This would not be in good grace if we were recommending to the attention of the Foundation any particular group of men or any particular organization. We are recommending merely an idea as represented by the Institute. We are recommending the opportunity to utilize the desire of the industry to conduct research, made vocal by the Institute. More important still, we are recommending to the industry the necessity of aiding the Foundation to achieve its aim.

Naturally, the money which the Foundation has in its custody would be a help toward prosecuting the idea which the industry, through the Institute, has in mind. However, the income from the Foundation fund is not in itself adequate to do the fundamental technical research job for this industry. As an estimate, we would say that a minimum of $500,000 a year would be required. That money should come from the industry itself. It should represent cooperative contribution of all factors engaged in the industry. It would then represent one of the best investments the mills have ever made.

This job is approached
there will be no question of the "rights" of the cotton division or the wool division or the silk division or any other individual branch of the industry. There are certain fundamental problems affecting the entire industry; there are others affecting primarily specific parts of the industry. An organization

August 9, 1930—TEXTILE WORLD (655) 25

Fabrics For National Defense

Rayon parachute-troop cloth specified; woolen gloves and wristlets ordered

THE VALUE OF PARACHUTE TROOPS has been demonstrated, and the U. S. Army is training soldiers in this method of warfare. The problem of developing suitable uniforms and equipment for the men from the sky has many complications, among them that of finding a smooth, strong, snag-resistant material from which outer clothing can be made. Being tested at present is a fabric known commercially as "tackle twill," which in recent years has been used in football uniforms.

The fabric is a 3 up, 1 down right-hand twill with a high-sley continuous filament rayon warp and a ply yarn combed cotton filling. It is covered by Quartermaster Corps Tentative Specification P.Q.D. No. 38.

The specification states that the cloth shall be of one type only, that grade shall be all firsts, and that when finished the fabric shall be clean, evenly woven, and free from defects which may affect appearance or serviceability; the color shall be an approved shade of olive drab, evenly dyed with vat dyes, and shall show good fastness to weather, dry cleaning, and laundering.

Physical requirements of the twill are as follows: 41 in. width exclusive of selvages, 8.5 oz. per sq.yd. weight, 240x66 construction, 180 lb. warp and 80 lb. filling breaking strength when tested by 1x1x3 grab. The warp yarn shall be a high-tenacity, viscose-process continuous-filament yarn of at least 150 denier and 40 filaments.

Though not stated in the specification, in a fabric to be finished to 240x66 construction, using 150-denier warp yarn, a filling yarn plied to the equivalent of 14s is approximately correct to produce the required weight. An analysis of an approved sample shows that most of the yarn contraction in weaving is in the warp; the approximate contractions are 12.5 to 13.5% in the warp and 1 to 1½% in the filling. This aids in producing the smooth, well-covered face and close texture which is required.

In finishing, the fabric shall be preshrunk; when finished cloth is subjected to tests for shrinkage in laundering as outlined in Federal Specification CCC-T-191 it shall not shrink more than 7% in the warp or 2% in the filling. The cloth shall be singed and desized before dyeing and shall not be treated with any finishing or loading materials to increase weight or strength; a durable water repellent treatment shall be given.

SEVERAL MILLION PAIRS of O.D. knitted woolen gloves have already been ordered, and more calls are expected. These gloves are covered by Specification 8-60A, which is abstracted below, together with certain exceptions included in late bids, which have been inserted where applicable.

Rayon "tackle twill" fabric gives strong, smooth, snag-resistant parachute troop uniforms

Yarns—3-ply woolen yarn, made from stock no lower than 56s grade (use of reworked wool, card stripping, card fly, or similar waste prohibited). Yarn to be approximately 3/3.6 typp in size (3/12, cut system; 3/2.25, run system).

Color—Olive drab, produced by blending olive drab and white wools; must be fast to weather and to laundering.

Sizes—Four sizes are required: 8, 9, 10, and 11.

Construction—Hand: plain knit on 4-in. cylinder or flat knitting machine, with not less than 64 needles. *Cuff:* 1x1 rib knit, on 4 in. cylinder or flat knitting machine, with not less than 64 needles, and with non-raveling welt, then knitted or transferred to hand. If knitted on flat machine, cuff shall have four more needles than in hand. Alternate specification requirements contained in recent bid invitations specify either 4 or 4¼-in. cylinder machines for rib cuffs; they also permit an imitation rib cuff joined loop for loop to the hand without seaming or stitching, and with in-between wales formed with worsted yarn not finer than 2/13.4 typp (2/24 worsted system), with floats in back floating between two wales.

Fingers: Knitted seamless, tip narrowed to 14 needles, hand finished with same yarn. (Alternate specification permits tips of fingers to be gathered together and finished with same yarn.)

Thumbs: Knitted seamless; bottom to an opening of 28 needles; narrowed down to 24 needles; tip narrowed to 16 needles and hand finished with same yarn. (Alternate specification permits tips of thumbs to be drawn together and finished with same yarn.)

Finish: Gloves thoroughly scoured, fulled, rinsed clean, formed to proper shape and size. Measurement in inches given in chart below (overall length measured from tip of middle finger to end of cuff).

GLOVE MEASUREMENTS

	Sizes				Tolerance
	8	9	10	11	±
Hand across palm	3¾	4	4¼	4½	¼
Cuff length	3	3	3	3	¼
Length over-all	10	10½	11	11½	¼
Thumb length	2¾	2⅞	3	3⅛	⅛
Index finger	2⅝	2¾	2⅞	3	⅛
Middle finger	3⅛	3¼	3⅜	3½	⅛
Third finger	2¾	2⅞	3	3⅛	⅛
Small finger	2⅛	2¼	2⅜	2½	⅛
Weight per doz. pair, oz.	35	37	39	41	5%

It Has Happened in Lancashire

British cotton industry under State control has yielded most of its individualism

By AN AUTHORITATIVE OBSERVER

THE ENGLISH COTTON INDUSTRY, since the first week in March, is operating under a rigid system of State control. Virtually the only heritage from the era of free enterprise left to it is the privilege of making profits—if it can.

The salient fact about all this is that what is interpreted as a war measure was foreshadowed by an Act of Parliament passed in peace time, one month before the present war began. The Cotton Industry Control Act of August 4, 1939, gave the State the right to reorganize cotton in an attempt to cure evils, which the industry itself had not been able to do by its own voluntary efforts in the previous decade.

The outbreak of the present war deferred the full operation of that act, which briefly provided for the following three things:

1. The registration by Oct. 4, 1939, of all persons or firms engaged in any phase of the cotton industry. After such a date, cotton became a "closed industry" and any one not registered, attempting to engage in it, was subject to an exorbitant fine.

2. The establishment of a minimum price below which goods could not be sold, and of a minimum charge for processing.

3. The elimination at a compensation of mills classified as "redundant," whose output stood in the way of the maintenance of prices, or of profitable operation of the industry as a whole.

The shades of the rugged Lancashire individualists of the nineteenth century must have shuddered in their Valhallas —or wherever shrewd cotton men go after a life of profitable trade—at the passage of the Act! But, to use a slang phrase, "they hadn't see'd nowt yet." Compared with the present efforts of the Board of Trade to reorganize it under the guise of war necessity, the Cotton Control Act was a reactionary capitalistic stimulant to the industry.

While the president of the Board of Trade (comparable to our Secretary of Commerce) had the power under the 1939 Control Act to reorganize the industry, he chose rather to proceed under the powers given him by the Defense of the Realm Regulations, which are far more drastic and expeditious, but are only supposed to have force during a war emergency. The changes which the board will bring about in the cotton industry will, however, be permanent, and implement the purposes of the Cotton Control Act, without benefit of certain benevolent features of the act.

Under the Defense Act the president of the Board of Trade is granted powers "for securing public safety . . . . and for maintaining supplies and services essential to the life of the community." He can "require persons to place themselves, their services, and their properties at the disposal of His Majesty for war purposes." In the first week in March these latent powers were exercised. An order was given for "the concentration of production" in the cotton industry, "*in a reduced number of factories working full time.*" (Italics mine.) The alleged reason was the necessity of releasing labor for war purposes and of the conservation of shipping space and exchange.

The Board of Trade turned a deaf ear to the plea for the spread-over system. It also refused to recognize any merit in the contention that concentration in the cotton industry would not release any substantial amount of labor for war purposes, as it was already shorthanded. More especially, it was an industry in which 80% of the operatives were women, many of them mothers of families, who could not be transferred to other munition areas, to live in hostels, leaving the family cat to look after the growing children.

ONLY ONE MAJOR CONCESSION was granted as a result of the representations made. The industry could voluntarily decide for itself what mills are to be closed. Groups could submit schemes to the Board of Trade for its approval. It was a concession without much substance. Strict principles are laid down to govern groups in deciding which mills are to close with the following priority: (a) Mills engaged in Government work. (b) Mills producing export goods. (c) Mills providing for needs of civilian population.

The Government promised to "facilitate this concentration by granting to

And It Can Happen Here!

READ 'EM AND WEEP! This story, in our opinion, presents the best picture we have seen to date of what war means to the British cotton industry.

And it can happen here! Total war on the part of the despoilers of freedom demands total war on the part of the defenders of freedom. Actually, there rests in Washington today the potential power to do to the domestic textile industry pretty much what the British Government has done to Lancashire. And we are still nominally at peace!

There is nothing for the industry to do about it except to keep its nose clean (to use an inelegant but apt expression) and to cooperate to the fullest extent with Government agencies so that the industry may continue to direct its destiny, and yet contribute its maximum to national defense. That is what textile leaders have been trying, and are trying, to do.

But there is a deeper significance. Read the last paragraph of this story. "The tragedy of Lancashire," says the author, "is that what has come to pass had for a long time cast its warning shadow. The cotton industry in England, after a glorious past in the 19th century, fell behind the times and failed to cure its own evils. Its methods were antiquated, its vision restricted; it failed to modernize its plants or its selling technique, and became the victim of price-cutting and over-expansion. He who reads may learn."

Yes, he who reads *may* learn. But *will* he? Every word of that paragraph has a familiar ring. It applies to this country, and particularly to the last two decades. That is why this publication has preached, year in and year out, up-to-date methods, unrestricted vision, plant modernization, merchandising alertness, price stabilization, restraint in expansion through either new plants or added shifts.

The fundamental answer to all these problems is *research*. See pages 53 and 56 of this issue.—*Editor.*

groups of undertakings which fulfill the necessary conditions special help to safeguard their requirements of labor and raw material, but *they cannot contemplate the use of public funds to provide compensation.*" (Italics mine.) This is a vital departure from the peacetime Control Act which provided machinery whereby owners of closed redundant mills were to be compensated for dismantlement, and measures taken to relieve the hardships of superfluous millhands.

Although the Government, when the coal mines were nationalized on July 28, 1938, earmarked £66,450,000 (at the time roughly $330,000,000) to be given to the coal mine owners, and although the War Damages Act compensates for property damaged in air raids, etc., the mill owners in Lancashire will not receive one penny in compensation from the public funds if their mills are "blitzed" in the Government scheme for concentration. No wonder one prominent cotton man bitterly stated that the cotton industry was fated to be the Orphan of The Storm.

The club which the Government carries leaves the industry no alternative but submission. As all raw cotton is now the property of the State, the Minister of Supplies has the power to give or withhold supplies to mills, and any resisting an order to close would therefore be unable to obtain the needed raw materials with which to operate.

Again assuming the improbable, and that the Minister of Supplies were to give cotton to a mill ordered closed, then the president of the Board of Trade arbitrarily steps in "and will ultimately accept responsibility for seeing that the necessary measure of concentration is achieved and, where firms are either unable or *unwilling* to meet the situation by their own efforts, the *Government will be prepared in the last resort to impose the reorganization which circumstance may require.*" (Italics mine.)

What has been the result? The Liverpool Cotton Association, which had been in existence for 110 years, disbanded on March 18 and in accepting the decision of the Government in regard to importation and ownership of cotton "desired to place on record their protest against the decision made, believing that many of the changes that are foreshadowed are unnecessary and against the best interests of the cotton industry generally."

As regards the 400 spinning mills and the 800 weaving sheds, at least 200 mills will close and 300 sheds. By the beginning of April, 60 mills had already closed, while 111 had been certified as "nucleus mills," which would be part of the permanent establishment of the industry. The remaining 200 odd were in the intermediary category whose right to exist had not been definitely established. Some will survive but not many.

An assessment per spindle on mills allowed to operate is being discussed, to go toward maintaining the plants and machinery of such mills now in the intermediary class as will be certified as necessary for the industry in normal times, but will be unable to secure supplies for the restricted trade of the war period. These may look forward to some kind of a future. For the mills certified as surplus there is only a long unending night, even after peace.

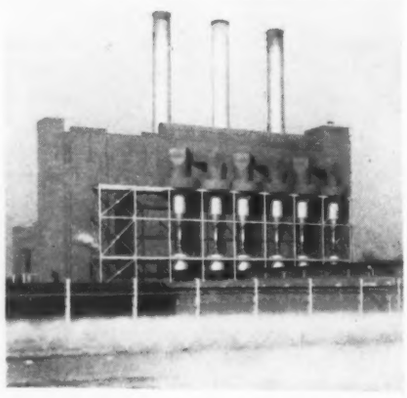
In the practical working of the scheme it is the small man, as usual, that is getting the worst of it. The big combines are meeting the order to concentrate by closing some mills not fully engaged, and operating full time in the remainder. The small owner cannot juggle his operations and work full time to justify his right to existence.

"War," as General Sherman said, "is hell," but the lesson to be learned from the tragedy of Lancashire is that what has come to pass had for a long time cast its warning shadow. The cotton industry in England, after a glorious past in the 19th century, fell behind the times and failed to cure its own evils. Its methods were antiquated, its vision restricted; it failed to modernize its plants or its selling technique, and became the victim of price cutting and overexpansion. He who reads may learn.

Starts Staple Output

PRODUCTION OF RAYON STAPLE has been started at the Front Royal (Va.) plant of American Viscose Corp., and output of continuous-filament yarns is being stepped up to meet increasing demands. Present plans call for the gradual addition of new equipment during this year, and it is expected that the plant will reach its full capacity of 50,000,000 lb. in 1942. Of this capacity, approximately half will be devoted to Fibro rayon staple fiber, and the other half to American Viscose's two high-tenacity viscose yarns—Tenasco and Rayflex.

The plant occupies a 425-acre tract, of which buildings cover 25 acres. Most of the buildings are of one-story, red-brick construction, lined with buff and white glazed brick. Much of the lighting is of the fluorescent type. A large air conditioning system is provided. The Shenandoah River provides a plentiful source of water, which is filtered, treated, purified, and then stored in a 3½-million gal. spray pond. From this reservoir it is drawn, as needed, for boiler-feed and process purposes. The power plant is said to be the largest in the world devoted solely to the manufacture of rayon yarn. Its five turbine-generators are capable of producing a constant supply of 24,000 kilowatts.



New Power plant of American Viscose Corp. at Front Royal, Va., said to be largest in world devoted solely to manufacture of rayon; in foreground is seen part of 3,500,000-gal. spray pond

All machinery used in the various steps involved in the production of the viscose solution has been designed with a view toward maximum efficiency, minimum handling, and uniform quality. For example, the steeping presses are so arranged that the mercerized pulp can be discharged directly into shredders on a lower level. The spinning room covers a space of over nine acres; 100 large spinning machines are already installed, and space has been allotted for future addition of an equal number. These machines are specially designed for spinning high-tenacity continuous-filament yarns. Fibro is produced by a battery of machines specially designed for efficient production of a tow of uniform quality.

In a large, well-equipped laboratory every step in production is regularly checked and all finished products are thoroughly tested. Approximately 2,000 men and women will be employed at the Front Royal plant when capacity production is attained. To protect their health, complete dispensary facilities are provided. A cafeteria, large enough to take care of all employees, is run on a non-profit-making basis.

Sets Ceiling on Combed Yarn Prices

Henderson puts 42c. as top for 30s single —Reactions of Washington to the move

McGRAW-HILL WASHINGTON BUREAU

PAUL WOOTON, Chief Correspondent
Blaine Stubblefield
Irvin D. Foos Carter Field
Robert Colborn M. G. Maury

By BLAINE STUBBLEFIELD

AS THE FIRST YEAR of official defense operations closed, the Henderson Office of Price Administration and Civilian Supply issued a schedule of ceiling prices for various grades of combed cotton yarn. This was the seventh maximum price set by OPACS on critical materials: used machine tools came first, then zinc scrap, aluminum scrap, scrap iron and steel, steel, and, on May 24, combed cotton yarn. A top figure was set on bituminous coal, but was removed when the strike ended.

With specific reference to combed cotton yarns, Price Administrator Henderson said recent months had seen a rapid advance in these yarns, which constitute an important raw material in the manufacture of cotton products for defense. He said that the increases had exceeded the current rise in manufacturing costs. Therefore, he added, current prices were inflationary in character. They were the result of speculative activity, he argued, and unless controlled, would lead to further such activity, and the withholding of yarn from the market.

Some OPACS officials approached by TEXTILE WORLD on this matter, seemed to feel that the spinning industry had taken advantage of an opportunity for unreasonable profit. But others, whose advice goes to the top, said that no blame attaches to any one. They said that prices rose as a natural consequence of scarcity, because there was nothing to stop them.

To the question whether the set ceiling might prove too low and bring curtailment of combed yarn production, officials answered that, in the first place, a study is being made, as Mr. Henderson announced, to determine whether a hardship will be worked on any marginal firms; second, OPACS feels that, according to statistics on file, manufacturers will earn enough under the new schedule so that they will not want to shift to something else. Officials did admit that some overtime production involving time-and-a-half for wages might be discontinued.

Whether the price ceiling would affect exports did not appear to have been made clear in public statements. But privately, authorities said in their opinion the sworn statement required of manufacturers means prices on any sales, domestic or foreign. Even if it did not, they pointed out, any critical goods can be brought under export control.

A point particularly emphasized in Mr. Henderson's statement and by OPACS officers concerning combed cotton yarn is that the price ceiling was set about 20% below then current quotations. This, they said, was to discourage any future hopes of other industries that increased price levels will be pegged as the ceiling. It is possible to set a price ceiling on the basis of actual costs only if it is done soon enough, according to the Government's price economists. They claim that, if the spirals are allowed to run, they become cost factors in each other and are beyond adjustment except by drastic measures.

THERE ARE ELEMENTS OF OPPOSITION in Washington to the Henderson price ceilings. This, the first one on cotton products, brought protests from some cotton Congressmen on the ground it would tend to cut into cotton prices. But this complaint was largely offset by legislation just signed, giving growers mandatory loans equal to 85% of parity, plus conservation and parity cash payments. Congressional opinion that price ceiling fixing is unconstitutional is regarded as minority opposition that will have no effect.

There was speculation about additional ceiling prices in the cotton-textile field, but nothing definite enough to justify publication.

To sum up the provisions of Henderson's price schedule, it puts the ceiling on 30s single ply, the key count, at 42¢. This compares with recent quotations of 52¢. Based on this key 42¢ price for 30s is a schedule ranging from 10s at 32¢ for single and 38¢ for 2-ply, to 100s at $1.14 and $1.23 respectively; 110s and 120s are set at $1.43 and $1.63 for 2-ply, with ceilings omitted for singles.

It is pointed out that this schedule applies only to combed cotton yarns of ordinary commercial quality. Premiums over the stated prices may be charged for excess twist, three or more ply, high break, or for long cotton.

Prices apply to all deliveries, including old contracts, after May 26, effective date of the schedule. There are no geographical differentials. The ceiling rates take full account of current materials and manufacturing costs, Mr. Henderson said. It is not so stated officially, but undoubtedly the schedule could be changed by a new order at any time.

This order applies to purchasers as well as to sellers, that is, it is illegal to *purchase* above the ceilings; but only sellers are required to make the monthly sworn statements. The prices are for combed yarns delivered to purchaser's customary receiving point, except that additional charge may be made for transportation in excess of 1¢ per pound. The prices are gross, before discounts of any kind, including commissions.

Every person who sells 500 lb. or more of combed yarn in one month must keep, and preserve for OPACS inspection for at least one year, complete and accurate records of sales, amounts, specifications to whom made, and price paid. The sworn monthly statement, form of which is set forth by the Henderson office, must be subbitted on July 7 and the seventh of each succeeding month in which the person or firm sells 500 lb. or more.

Persons who sustain hardship or inequity under the operation of this schedule, arising from previous commitments, or from any other cause, are invited to apply to Mr. Henderson's office for approval of modification.

(See Editorial on Page 54)

Traphagen's Pan-American Styles

A PAN-AMERICAN FASHION SHOW was held recently at Hotel Astor, New York, at which the costumes were designed, executed and modeled by students of the Traphagan School of Fashion. Fabrics were available through the cooperation of 60 textile firms, including mills, converters and rayon manufacturers. The show was offered as a contribution to current fashion problems and as an example of a direct attack on the problem of originating designs from sources that are typically American. The pictures are representative of over 130 original models shown.

LEFT
The Cotton Bride, in Henry Glass & Co.'s Peter Pan eggshell pique, was a prize winner among the special occasion dresses of cotton. Designed by Edith Axelrod inspired by a bombazine dress of 1882

FAR LEFT
Evening ensemble—one of a group of costumes designed for Duke and Duchess of Windsor by Traphagen students. White wool gabardine jackets; trousers of navy gabardine, skirt of navy crepe. Designed by William Griffin

One of the group of bathing suits of knitted wool sponsored by Augusta Knitting Co. This model was designed by Rhoda Van Hyning utilizing yellow and brown checks

Hostess pajama adapted from an Argentine man's costume using Duplex Fabrics Corp.'s "Seventh Heaven," a luxury rayon fabric. Designed and modeled by Lynne Kimmel, winner of three first prizes

Forget-me-not design, a print by Helen Leib, made by Mallinson's of Bemberg rayon, in afternoon dress by Philip Perkins, won first place in the street dress division

First prize winner in the beachwear group. Three-piece playsuit in blue and white chevron sharkskin from Cameo Fabrics, designed by Lynne Kimmel. Breeches are new style note

Georgia Mills Accept Power Cut

Association cooperates with Georgia Power Co.; G. P. Swift named president

IF SIR **JAMES ALEXANDER,** the famous "Scotch journalist"—who, after speaking at the banquet, took off his false whiskers and turned out to be just a guy from Boston—had also been a rainmaker he would have gone down in history as the most popular man ever to attend a convention of the Cotton Manufacturers Association of Georgia, the 41st annual meeting having been held late last month at Sea Island Beach, Ga.

Charles A. Collier, vice-president, Georgia Power Co., told the members that due to shortage of rainfall and increased industrial use, water in the reservoirs has been lowered to a point where the mills would have to curtail power consumption by at least one-third unless rain fell immediately and in great quantities. He urged the mills to agree voluntarily to this reduction, or the Government would declare a mandatory priority on all Georgia power in favor of the aluminum industry. June 9 was given as the latest date power could be supplied in present quantities.

Following Mr. Collier's plea, a committee was appointed to go into the matter and its recommendations later were adopted in the form of a resolution. This resolution asked the power company to enforce mandatorily a power reduction of one-third when and if it is felt necessary. The reduction is to apply between Monday morning and Saturday noon, with the understanding that the mills can have full requirements over the week end, subject to availability. This means that with special permission of the industrial commissioner (which will be granted) it is possible for a mill to operate on Sundays and lose a total of only 6 hr. out of the regular full weekly production schedule. This reduction of power consumption at the present time applies only to Georgia mills, although it was feared that unless rain fell soon there would be a power shortage over the entire Southeast.

J. A. Miller, president of the association, expressed fear in his address that the Government is "about to raise a barrel of money we don't need in the name of National Defense." Based on the assumption that the National income will be around $90,000,000,000 for 1941, he said that the Government should need only $367,000,000 in excess of existing tax revenues instead of an estimated $3,500,000,000.

GEORGE P. SWIFT, newly elected president of the Cotton Manufacturers Association of Georgia, is vice-president of Muscogee Mfg. Co., Columbus, having begun working with that company after graduating from the University of Georgia.

Congressman Eugene Cox, of Camilla, Ga., charged organized labor with being responsible for serious delays in the defense program, interpreting the stoppages in terms of the number of guns, tanks, planes, etc., which could have been made during the time lost by strikes. The membership endorsed Mr. Cox's views later in form of a resolution condemning strikes which interfere with National Defense.

Dr. Gus Dyer, professor of economics and sociology, Vanderbilt University, made an address condemning Government extravagance.

JULIAN T. HIGHTOWER, vice-president of Thomaston Cotton Mills, Thomaston, Ga., long active in affairs of the association, was moved up from the position of treasurer to vice-president.

George P. Swift, vice-president, Muscogee Mfg. Co., Columbus, Ga., was elected president of the association for the next year. Julian T. Hightower, vice-president, Thomaston Cotton Mills, Thomaston, Ga., moved up from treasurer to vice-president. G. I. Parminter, of Goodyear Clearwater Mills, Atco, Ga., became treasurer. T. M. Forbes, secretary, was reelected, and it was announced that an assistant to Mr. Forbes, John Wilkison, of Atlanta, had been employed during the last year.

Major golf prizes were won by Tom Mott, Corn Products, Co., first low gross; Frank Kimble, Jr., low net for members; Walter M. Wellman, low gross for members; Harry Roberts, low net for guests. The golf tournament was run by W. R. Beldon, manager of Clark Thread Co., Austell, Ga., chairman, J. W. Stribling, Universal Winding Co., Atlanta, and Robert W. Philip, editor of *Cotton*, Atlanta.

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S. C. Cotton Mill Men Reelect Chapman

General Charles P. Summerall, president of the Citadel, South Carolina military college, told the members of the Cotton Manufacturers Association of South Carolina in convention at Myrtle Beach, S. C., last month that the Southeast would probably be the first section of the United States attacked by enemy aviation in event of war. He urged the manufacturers to set up a system of factory defense and stressed the need of first-aid training for employees. He further explained the purpose and duties of the home guard and warned that South Carolina must be prepared to defend her cities and evacuate civilian populations.

W. Ray Bell, president of the Association of Cotton-Textile Merchants, New York, explained defense needs in the field of cotton textiles.

James A. Chapman, president of Inman Mills, Spartanburg, S. C., was reelected president of the association. S. H. Swint, of Graniteville, was made vice-president. William P. Jacobs and Sadler Love were reelected executive vice-president and secretary, respectively.

Cost Manual for Yarn Processing

Use of stores-issue and time cards in compiling and allocating expenses

By FORREST J. FALES
Cost Engineer, Glen Lyon Print Works

IN THE FIRST INSTALLMENT of this manual which appeared in our May issue, Mr. Fales described the setting up of process and cost centers and principal expense divisions and began the discussion of methods of compiling charges and allocating expenses. The next installment will deal with process costs.

VI (cont'd.) Compiling charges and distributions or allocations.

Proper distribution of stores through use of stores-issue cards entails the desirability of establishing a stores department. Inasmuch as the expense of stores, including drugs and color, forms a large part of the cost of doing business, it follows that this expense should be under proper control in its usage. To this end it is necessary that all materials used should be segregated in some convenient location, in a room set apart, and which is capable of being locked. For convenience, it is desirable to have color and drugs used in dyeing located within the dyehouse, but in a separate room. When this floor area has been apportioned, all materials throughout the plant should be collected, weighed, and placed in bins or other receptacles so that each item is by itself. This should be done if possible at the beginning of an accounting period or a given month.

Prices should be placed on each item at a value per unit of measurement, and such value should be as near the cost as possible. These prices may be placed on a stores tag attached to the bin or article and also, if conditions warrant, to a stores-balance card, designated as a perpetual inventory. When this has been completed, an inventory should be made showing the amount and value of each item. The total of this inventory should be reconciled with the ledger account and adjusting entries made.

At this time, maxima and minima should be established and placed on the stores tags and balance of stores cards, so that inventories may be controlled and no shortage of required material occurs. The responsibility for maintenance should be placed with the storekeeper. This covers the receipt of material, as well as the issuance. Receipt slips for all materials should be forwarded to the accounting department and become a part of the voucher record.

The store room, or rooms, should be placed under the supervision of a competent man who may be required to devote all or part of his time to this job. From the time of the establishment of this department and the inventory of materials, nothing must be issued except upon a properly charged and signed stores issue card, examples of which are shown in Figs. 1 and 2. This may seem a complicated and expensive method, but in reality the control of inventories and material usage thus set up has been found to offset the expense many times.

At this point it will be noted that provision for the distribution of labor expense has been established by the use of daily time cards, and material u age and control by the use of stores-issue cards and the establishment of a stores department. In addition, proposed accounts have been set up in the main books and reconciled so that it remains to provide the means compiling the journal voucher from the plant or cost records.

To this end it is recommended that each month's expense, represented by time and stores-issue cards, be compiled by departments and, in turn, summarized for the plant as a whole. This record should show the expense of each department in detail as enumerated in Table III. In the summary form, auxiliary or service departments expense should be listed as such.

This record forms the basis for future distributions and allocations, as well as the means for measuring variances from standard or stint as will be explained later.

A separate schedule should be compiled each month showing direct labor, direct hours, production, and any other useful statistics against each process or cost center. This record forms the means of direct labor expense control and is also used in compiling standards or stints and unit costs.

The terms "manufacturing expense" and "operating expense" will be used subsequently. They are defined as follows: Manufacturing expense, as used here, represents the direct departmental expense; that is, the sum of labor, materials, and repair expense. Operating expense, as used here, represents the sum of labor, materials, repair, and auxiliary or service departments expense.

Time cards should be issued each day to each employee as explained in Section VI. The cards (Fig. 3) should be stamped with the starting and stopping time of a day or job, and are preferably handled through card racks at the main plant entrance. Each card is stamped with a department and number corresponding to the pay-roll, and each employee must obtain his own card at the beginning of each day and deposit it at the end of the day. The racks should be capable of being locked so that late operatives and those going out early may be recorded.

Each operative should show upon each of his cards the proper symbol for the job upon which he is working. These symbols will follow the method as layed out in Table II, except that certain general symbols will be required. These symbols, which should be used in all departments with the proper department symbol prefixed, are as follows:

Foremen and clerks.....A
Miscellaneous or unclassified labor..X
Supply labor .....S
Repair labor or yarn.....R
Sweeping, scrubbing, cleaning.....Y

For example, supply labor in the winding department would be symbolized as BS; and miscellaneous labor in the boiler house as AHSX. This method of recording expense by the use of the above symbols is wholly arbitrary and some other method may be substituted if it seems advisable.

In addition to the above-described symbols, each operative performing direct labor must show upon his card the amount of production which he turns out during a given period. Inasmuch as this production record forms the basis for figuring unit costs, and in some cases, the basis for wage payment, accuracy is essential, and some

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method of checking must be devised.

When the amount of wages has been figured on the time cards, all the requirements for the distribution of labor and the recording of pay roll by departments have been completed. Actual distribution may be made each day on a separate schedule or, if tabulating equipment is used, it should be done by period of, say, a week. In any case, this distribution must balance with the pay roll. At the end of the month this distribution is entered in the plant cost records and becomes the labor part of manufacturing expense.

Materials or stores used are measured by the stores-issue cards and are likewise symbolized so that proper charges may be made. This symbolization is more simple, however, and is accomplished by the use of letters "D" and "S" prefixed by the department symbol, D indicating direct or manufacturing stores and S indicating miscellaneous or unclassified stores.

In making the stores distribution each day or period, each item of direct stores is shown separately on the stores schedule. This is done so that distributions may be made on some items and that controls may be set up for the use of each.

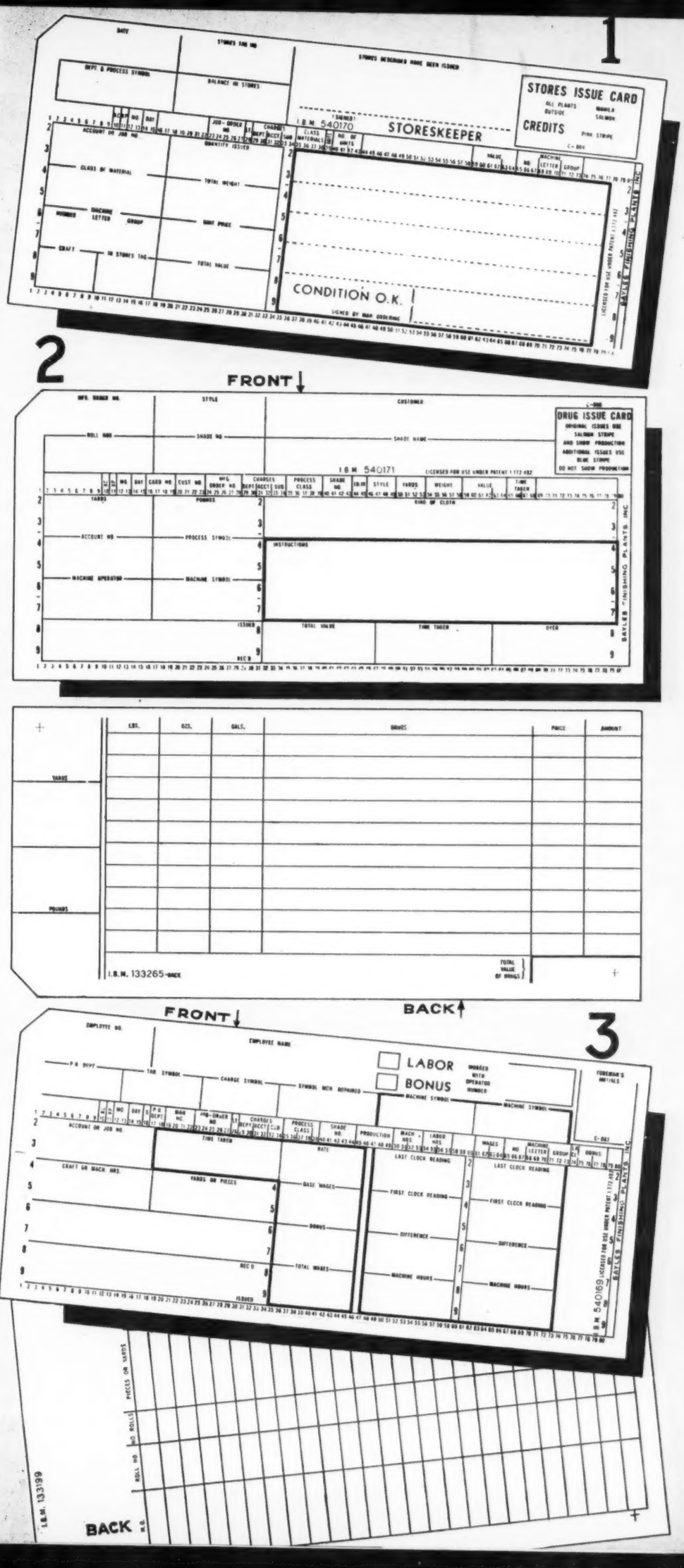
The item of miscellaneous or unclassified stores is entered against the department as such and no detail except the cards themselves is maintained.

For convenience, the issuance of drugs and color used in dyeing is kept separate from regular stores and is preferably handled on a separate form or card, such as is shown in Fig. 2. This is done so that the drugs and color against each dyeing operation may be measured and that the cost of each shade may be computed.

At the end of the month, the stores distribution is entered in the plant or cost records, and becomes the stores or material part of manufacturing expense.

The expense of repairs is distributed by first building up a repair-expense account by using the time cards and stores-issue cards and including shop expense, all of which is in turn distributed to departments. This distribution at the end of the month is entered in the plant or cost records and becomes the repair portion of manufacturing expense.

When these entries have been made in the plant or cost records, it will be found that the manufacturing expense of the plant has been built up and allocated to departments. The summary of these items will form the basis for the journal voucher, the debits being operating expense and the offsetting entries credits to pay roll and stores or clearing accounts.



How to Handle Rayon in the Mill

Experts describe latest methods used for spinning, throwing, and weaving

PRESENT-DAY PRACTICE in spinning rayon staple, throwing crepe yarns, and weaving rayon fabrics were described at the "Rayon Institute," held May 5 to 9, at North Carolina State College, in Raleigh. The lectures, which were supplementary to the regular courses offered at the Textile School, were open to mill men as well as students at the school. H. O. Kennette of E. I. du Pont de Nemours & Co., Inc., spoke on the mill processing of rayon staple; Rene Bouvet, of American Viscose Corp., on throwing; and Irving Lewin, of Carter Fabrics, Inc., on weaving. Abstracts of the papers delivered by those men are given below. Other speakers were Dr. Harold De Witt Smith, of A. M. Tenney Associates, on "Recent Developments in Synthetic Fibers and Fabrics"; Frank Love, of North American Rayon Corp., on "Manufacture of Viscose Rayon"; D. L. Friday, of Cocker Machine & Foundry Co., on "Mechanics of Rayon Warp Preparation"; H. B. Summerell, of North American Rayon Corp., on "Preparation of Rayon Yarns for Manufacture of Box Loom Fabrics"; and C. R. Hall, of Enka Rayon Corp., on "Physical Testing of Rayon Yarn."

RAYON STAPLE consumption in the United States last year was approximately 99,000,000 lb., stated Mr. Kennette. At present there is a definite trend toward the use of 3- and 5.5-den., 2½- to 3-in. staple in the longer lengths on the cotton system. When using 2½-in. staple, it is necessary to use the floating middle top roller method of drafting or to eliminate one set of drafting rollers entirely on the drawing and fly frames in order to take care of the length. It is the concensus that the average cotton mill must revamp its present equipment or purchase new equipment if it wishes to process staples longer than 2½ in.

For a number of years the importance of adequate relative humidity (55% to 65%) in the opening, picking, and card rooms was not recognized. During this time the mills experienced much trouble from static, splitting laps, and poor handling of the laps at the pickers and cards. Much trouble was also experienced with web breakage and poor web formation at the card. It is now possible to eliminate static, splitting laps, and web breakage through maintenance of the proper humidity and use of top and bottom lap split preventer fingers on the pickers.

Rayon staple is being handled successfully on both the conventional cotton pickers and on the one-process picker without major changes. Care and judgment must be used in setting the Kirschner beater to the feed rolls. If the setting is too close, trouble will be encountered with neps.

The tinting method in most general use is by means of spray heads in the hopper opener or bale breaker prior to picking. It has been found that a great improvement in the uniformity of the tinting can be made by using two hoppers in tandem and applying one half the tint in the first hopper and one half in the second hopper. The stock is then generally blown by air to a storage bin and allowed to age a few hours before using.

If the relative humidity is much lower than 55% during carding, trouble usually results. When the cards are dull or the wires become damaged, loading results. Loading of the lickerin can generally be eliminated by reducing the speed. Web breakage, in many cases, can be taken care of through change of tension. Normal card settings used on a good grade of cotton usually work equally well on rayon staple. Generally the top flats are run as slow as possible and the top strips reduced to a minimum.

Many of the problems in subsequent operations have been traced to improper roller setting and tensions at the drawing frame. The general tendency has been to set the rollers too close, resulting in a non-uniform sliver. Many mills have found that they could obtain fairly satisfactory results by removing the third set of rollers and drafting on three, rather than on four rollers.

When the mills began using 2 and 2½-in. staple, they were unable to spread the rollers on roving frames sufficiently for these lengths. This necessitated resorting to the slip-draft method employing a floating top middle roller. While very large poundages of rayon staple have been run by this method, the results have not been entirely satisfactory. A few years ago some of the mills began to install long-draft roving frames designed to handle 2-in. staple. The results from some of these frames were encouraging; and today most of the machinery builders have roving frames which are designed to handle up to 3-in. staple.

Use of a floating middle top roller has become standard practice on the conventional type of spinning frame. Long-draft spinning apparently gives a slightly greater yarn breaking strength than the conventional system when the roll settings are adequate for proper drafting of the staple length. If the staple is slightly too long, there is not much room for adjustment, and the results are then less satisfactory than when the old conventional frames are used.

FOR THROWING 100-den. rayon with 52 t.p.i., the yarn must be secured in the proper form, stated Mr. Bouvet. Small skeins are not desirable because of their high processing cost. Large skeins do not lend themselves to satisfactory sizing. The trade appears to favor ½-lb. skeins. A soaking bath for rayon crepe generally consists of from 95 to 97% water, the balance comprising such ingredients as oil, gelatine, and tint.

It is widely recognized that an increase in gelatine percentage will have a decided tendency to reduce the pebble size, while an increase in oil percentage will increase it. There are, however, other factors involved. For instance, owing to differences in chemical structure of different brands of rayon, it is important to design the soaking formula according to the characteristics of the particular rayon used and type of pebble sought.

Application of the crepe treatment is mostly carried on in soaking tubs or with specially designed machines. While it is possible to size the yarn in the single end, this method is little used, owing to the complications it entails and its cost. A large group of throwsters prefer machine processing, as it produces a more evenly tinted

yarn than tub soaking. This matter of even tinting is rather important for plants handling a large number of descriptions as it helps to preclude mixtures.

Following soaking, the yarn is extracted to remove the excess liquor. The importance of uniform extraction within each batch and among several batches likely to be merged later cannot be over-stressed. One must guard against overloading the extractor, having bundles so close to the center of the basket that the degree of extraction they receive is by no means comparable to that of bundles located farther away. It is recommended not to exceed 160 to 170° F. during the drying operation. Duration of exposure is to be so regulated as to prevent under-drying, as well as over-drying. In the event dehydration is carried on to the point where less than 5% of moisture is left in the yarn, the level dyeing property of rayon is affected adversely. Following drying, it is desirable to allow the skeins a cooling and conditioning period by merely exposing them to room temperature.

Too much tension in winding will injure the yarn; too light a tension will result in soft bobbins, which will not run well in spinning. To prevent stretching the yarn during winding, it is well to limit the tension to a maximum of ¼ gram per den. and to operate at 55% r.h. or slightly lower. A fairly solid bobbin, level built, and free of ridges is necessary for efficient spinning.

For 100-den., spindle speeds ranging from 10,000 to 11,000 r.p.m. are common. While higher speeds are possible, they demand well balanced bobbins and spindles in excellent condition. A double-arm flyer, mounted with No. 8 wire, is a desirable type to use to obtain a tension within the limit of ¼ gram per denier. Serious defects may develop in spinning; namely, slack twist due to slipping spindles; high twist traceable to slipping take-up shaft bobbins; broken filaments, cut and weak yarn caused by rough flyer wires; fly waste; burnt yarn, generally caused by undue friction of the cork rolls on the yarn; and soiled or dirty yarn. A great deal of the soiling seems to be from dirt accumulating on the flyer arms while in motion and on the yarn itself during any shut-down period. Adequate air cleaning is likely to be one of the most helpful steps to take to curb soiling.

Modern steamers are equipped with wet and dry bulb control. A combination of 175° for the dry bulb and 165° for the wet bulb is quite adequate to set 100-den. rayon crepe 52 turns. The duration of the steaming time varies according to the efficiency of the equipment at hand.

Whenever the crepe is to be redrawn, care must be taken to allow the steamed rayon crepe a period of conditioning prior to the redrawing. Furthermore, the redrawing tension must be kept within the tension limits cited before.

Tension changes as mentioned above in connection with up-spinners are also encountered on 5-B's. On a 5-B machine the thread speed is much higher, tension adjustments are difficult to control, and throwsters running combinations experience a great deal of trouble due to plying difficulties.

WEAVING EFFICIENCY has been increased and weaving costs have been reduced in recent years, according to Mr. Lewin. Ten or twelve years ago the non-automatic loom was running at four and six looms per weaver, but with the advent of the shuttle-change loom, which started out with eight looms per weaver, has slowly crept up to 12, 16, 24 and 32, and some mills now run up to 48 per operator on plain single-shuttle work. And now the still newer bobbin-change box loom permits even higher speeds and lower operating costs. Ten or twelve years ago, 72 to 76% efficiency and single- or double-shift operation was common practice in the trade. Today we reach efficiencies in excess of 95%.

With the improvement in machinery and yarns, new transitions take place that injure one branch of the industry and benefit another. Examples of this are sharkskins, cuprammonium sheers, and acetate taffetas. Ten years ago these fabrics were made exclusively on box looms. With the improvement in yarns and better dyes, it did not take the alert manufacturer long to find out that these fabrics could now be made on high-speed, single-shuttle looms. Under this evolution these three major fabrics, as well as many others, have been practically lost to the box-loom weavers. Upon the box looms, therefore, falls the burden of finding new, style-fabrics that cannot be made satisfactorily on plain looms.

Many cloths, which ten years ago were woven on non-automatic looms at 6 to 7 ¢ per yd. for the weavers' wages, have come down to less than ½¢ per yd., and with less effort on the part of the employees and with a weekly wage in excess of that which prevailed ten years ago. It is a matter of record that fabrics which ten years ago sold in the raw at 35¢ are selling today at less than 20; other dress fabrics which sold as recently as only four years ago at 33 and 34¢ are now selling at 24 and 25¢. Manufacturers were forced to develop new methods, short cuts, and better yarns.

Success is built, upon cost, production, and volume. Scientific management is vital to success. No longer is there any guesswork in calculating the cost of a fabric. Estimates and calculations, of course, have to be made, but departmental budgets have to be checked weekly in order to see that each of the departments lives within its budget and executes its maximum production with minimum cost. While cost is fundamental to the success of a plant, perfection is just as important and is the dilemma and bugbear of every mill man. Every new cloth presents a new problem; the battle to operate successfully at a competitive cost and establish and maintain a satisfactory reputation for perfection is the ever-present problem of the cloth manufacturer.

Most problems in spinning rayon staple on the cotton system can be traced to troubles encountered in earlier operations

Chattanooga Yarn Association's Outing

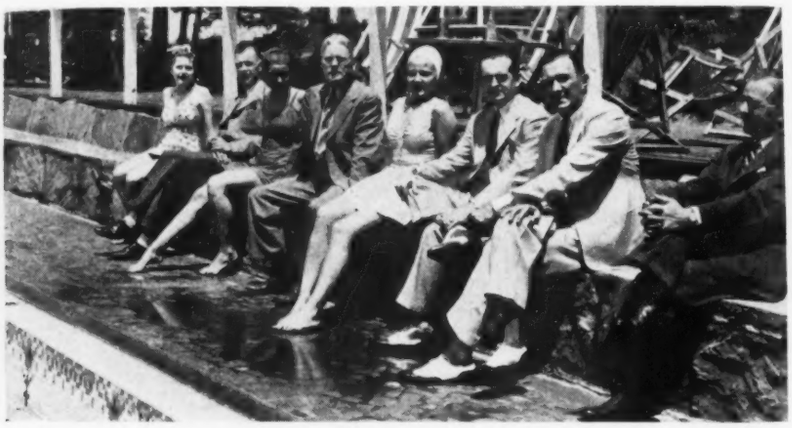
Snap-shots at Lookout Mountain on May 24

"There's nothing like a good pipe after a banquet," murmured Ben Phetteplace, manager, Southern Franklin Process Co., Greenville.

"Boy, what a floor show!" Entranced observers are Joe Ballentine, a star Smith Drum salesman, and Beal Fawcett, head of Scott & Williams

Between rounds—Jack Stickeley, Wm. Whitman Co., Charlotte, Lee Rayburn, of Morristown, Perk Thompson, of Textiles, Inc., Gastonia, Ralph Ewing, manager of Central Franklin Process Co., Chattanooga, and some caddies

The winnah! Jack Wyatt, of Crystal Springs Bleachery, Chickamauga, Ga., who shot a low gross score of 74 and 73.



Beauty and the mill men—R. W. White and W. C. Ward, of Southern Mercerizing Co., Tryon, N. C., C. D. Gott, of Charlotte, Wilbur Lawson, of Standard-Coosa-Thatcher, and J. P. Holt, of Aberfoyle Mfg. Co., Philadelphia

Above—Jim Cook and J. M. Ulmer, both of Dupont Rayon, Charlotte, N. C.

Left—These caddies want to grow up and be a real golfer like George West, president, Dixie Mercerizing Co.

Right—"Have a cigar, chum?"—Archie Fortune, Walker County Hosiery Mill, Geo. Szabo, Holston Mfg. Co., and Wells Moore, Crown Cotton Mills.

Why Be Afraid of the Slide Rule?

It provides mill man with a convenient means of making every day calculations

By E. H. HELLIWELL

MANY MILL MEN appreciate the value of the slide rule in their everyday calculations; many other mill men are skeptical regarding the accuracy of slide rule calculations on actual mill problems. Expert operators claim an accuracy of ⅛ of 1%, which is within the allowable error of most textile problems. However, even the most ardent disciples of the slide rule will admit that it has limitations and that the greatest of these is the number of significant figures that can be used or obtained. This limit on significant figures must necessarily affect the accuracy of the slide rule on some classes of problems. On the other hand, there are many types of mill problems where a reasonable sacrifice of accuracy will not affect results.

The four oft-used scales of the slide rule, as shown in Fig. 2, are marked by the letters *A*, *B*, *C*, and *D*. Scales *A* and *B* will give two and sometimes three significant figures; scales *C* and *D* will give three significant figures at all points and four significant figures on the left-hand ends of the scales.

If a slide rule calculation indicates that a 39.5-tooth gear is required for a certain process, choice must be made of either a 39- or a 40-tooth gear. This is a difference of over 1% from the estimated required gear, and closer accuracy than 1% would be of no advantage in this type of problem. In division or multiplication it should be remembered that the percentage of error in any of the factors will produce the same percentage of error in the result plus any personal errors developed in the process. Personal errors will be greatly reduced by faithful practice in setting and accurately reading the scale graduations.

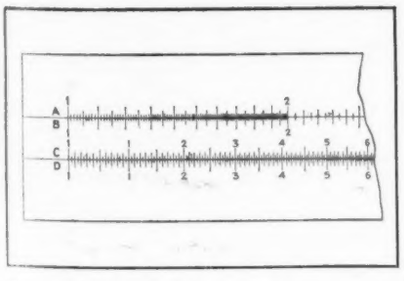


Fig. 2. End of slide rule, showing *A*, *B*, *C*, and *D* scales

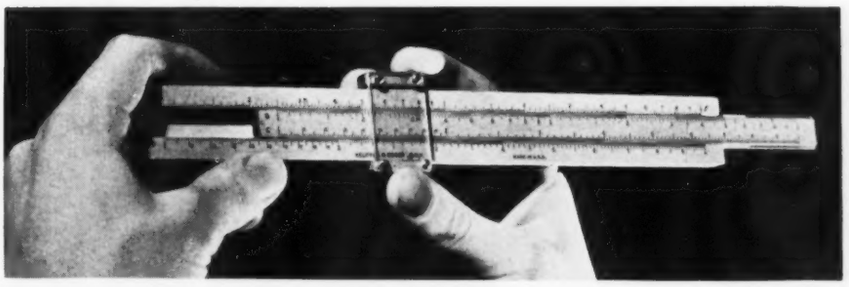


Fig. 1. A little practice on the slide rule enables one to make quick work of otherwise long and bothersome calculations

The factors in many problems can be so arranged that no reading of rule values is necessary until the final answer is indicated. An example of this is shown by the problem of finding the required twist gear for 3.00 hank roving when the twist multiple is 1.3 and the frame twist constant is 62. The equation for finding the gear is: constant ÷ (twist multiplier × square root of the hank roving). For the solution, put the runner to 3 on scale *A* and note that the square root of 3 is shown under the runner on scale *D*; put the left index 1 on scale *C* to this square root under the runner. The twist per inch is shown on scale *D* opposite the twist multiple 1.3 on *C*. Set the frame twist constant 62 on scale *C* opposite the twist per inch as shown on *D*. The required gear of 27.5 teeth is shown on scale *C* directly over left index 1 on *D*.

In the above problem, three different operations, namely square root, multiplication, and division, were performed without any consideration being given to any value indicated until the final answer was obtained. This arrangement of factors always should be made wherever possible because it eliminates the greater part of the personal errors which commonly occur in the reading and resetting of rule values.

The correct placing of the decimal point in slide-rule answers proves difficult in some problems. There are rules covering decimal placement, but mill men have the advantage of knowing the approximate answers, and the placing of the decimal point should not be a problem.

Direct proportion, used in many mill problems, is performed with the slide in direct position. Any figure on scale *C* set against any figure on scale *D* will establish this same direct ratio along the whole length of the scale. For example, what gear is necessary to produce a 58-grain card sliver if a draft gear of 14 teeth delivers a 54-grain sliver? Solution: Set 14 on scale *C* opposite 54 on scale *D*; read the answer on scale *C* opposite 58 on scale *D*. For every desired weight of sliver in grains on *D*, the gear required to give that weight is shown on *C*.

Problems involving inverse proportion are solved with the slide in inverted position, which means that the slide is taken out, turned end-for-end, then replaced. The numbers on the inverted slide read from right to left and are upside down. The scale readings on inverted *C* still are used against the *D* scale by the use of the runner. The hair line on the runner brings the desired figures on either scale into correct position for solving. The following problem is one involving inverse proportion: What gear is required to make 4.15 hank roving if a 30-tooth draft gear delivers 4.00 hank roving? Solution: Put the runner to 4 on scale *D* and set 30 on scale *C* (inverted) to the runner; put the runner to 4.15 and the answer, 29-tooth gear, is shown on scale *C* under the runner. The inverse ratio is established along the lengths of *C* and *D*.

The slide rule is well adapted to the use of machine constants, especially where the square root of the yarn number is required as one of the factors. The numbers on scale *D* are the square roots of the numbers on scale *A*, thus

a handy table of squares and square roots is always available.

By omitting one or more variable factors from a basic formula, a convenient constant can be obtained which will give the desired answers when values of the variable factors are used. The formula for cotton picker production is a good example of this method.

(Diameter of lap roll × pi × *r.p.m. of lap roll* × *oz. lap* × minutes × efficiency) ÷ (in. per yd. × oz. per lb.) = lb. per hr.

The complete formula is shown, but the terms printed in italics are variables and are omitted from the calculation of the basic constant. Assuming approximate average figures, the equation would read as follows:

(9×3.1416×60×0.85) ÷ (36×16) = 2.5

2.5 × r.p.m. of lap roll × oz. lap = lb. per hr. production

To obtain a basic production constant for cotton cards, the same procedure can be followed:

(Diameter of doffer × pi × *r.p.m. of doffer* × *grain sliver* × minutes × efficiency × coiler draft) ÷ (in. per yd. × grains per lb.) = lb. per hr.

Again, assuming normal values, the equation becomes:

(27.5×3.1416 × 60 × 0.95 × 1.15) ÷ (36 × 7000) = 0.0227

0.0227 × r.p.m. of doffer × grain sliver = lb. per hr. production

The same can be done to obtain other constants, as illustrated below. In each case, values assumed for the variables are shown in the equation in italics, but are omitted from the calculation of the constant.

Drawing frame production constant—

(Diameter of front roll × pi × *r.p.m. of front roll* × *grain sliver* × minutes × efficiency) ÷ (in per yd. × grains per lb.) = lb. per delivery per hr.

(1.25×3.1416×60×0.85) ÷ (36×7000) = 0.000795

0.000795 × r.p.m. of front roll × grain sliver = lb. per delivery per hr.

Spinning and roving frame production constant—

(Diameter of front roll × pi × *r.p.m. of front roll* × minutes × *efficiency*) ÷ (in. per yd. × yd. per hank) = lb. per spindle per hr.

(1.1875×3.1416×60) ÷ (36×840) = 0.0074

(0.0074 × r.p.m. of front roll × efficiency) ÷ (yarn number) = lb. per spindle per hr.

These examples are given in order to show the value of basic constants; every mill man can find many more of them. It should be noted that the constants are well within the range of the significant figures on the slide rule.

It will be found that the tables of equivalent ratios printed on the back of the slide rule provide a convenient, rapid method of converting quantities of units of one kind to the same values in other units. The ratio most often used is that of the diameter of a circle to the circumference of a circle, which is 113 to 355. This means that when 113 on scale *C* is set opposite 355 on scale *D*, every figure on *C* representing the diameter of a circle is directly opposite the figure on *D* which is the corresponding circumference. The practical mill man can easily establish a set of ratios for use on his own problems.

Drying With Infra-Red

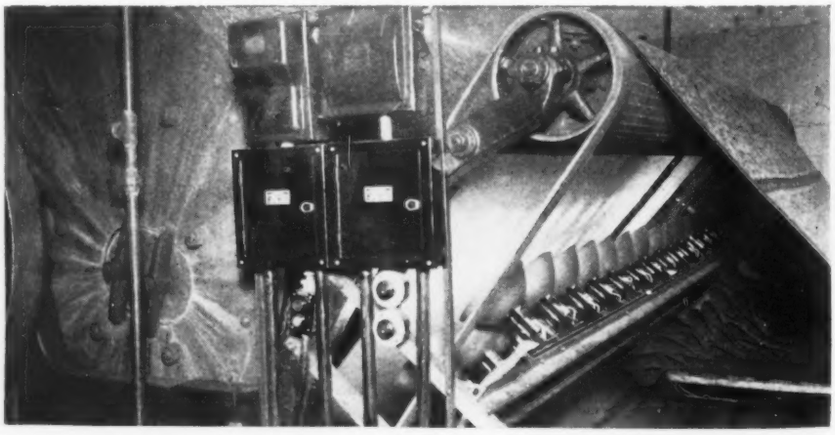
TEXTILES DRY QUICKLY when exposed to the rays of infra-red drying lamps, one of the newer electrical applications which are helping industrialists obtain quicker, more economical production. Features of infra-red, or radiant-heat, energy for drying are its power of penetration, the fact that it can be directed on and confined to the particular point at which drying is desired, and its independence of air circulation. Officials at Downs Carpet Co., Philadelphia, where one of the first textile applications of radiant-heat drying has been made, speak highly of the method, express belief it is potentially applicable to a wide variety of textile processes.

At Downs the problem was to eliminate a bottleneck in drying Wilton rugs and carpets after they were given a final steaming through the back to open up pile tufts closed or matted in previous operations. Prior to utilization of radiant heat, all drying was done by passing the rolls of carpet, face-up, over a large steam-heated drying drum. It was necessary to run the drum slowly enough to insure complete drying, since this is the final process before shipping. Production of the dryer was so low that, in order to keep up with weaving production, the steaming and drying unit had quite frequently to be operated until eleven or twelve o'clock at night, with resultant cost increases.

Installation of 28 250-watt infra-red lamps as supplemental drying equipment in front of the drying drum made possible 25% speed-ups on heavy goods, and as much as 30-35% increases on lighter constructions. As can be seen in the accompanying photograph, an understructure was first built, and the lamps and reflectors were then mounted on this in such a manner that they were close to the carpeting and directed toward it.

The lamps give off relatively little visible light. What there is is said to be advantageous in that it makes easy and quick check-ups on lamp failure from burnt-out bulbs or from other causes.

Each two lamps is controlled by a separate switch, so that when narrow goods are run the drying area can be narrowed to conform. It is interesting to note that installation of the infra-red lamps was achieved with little or no changes in or alteration of existing equipment. Lamps used in the Downs installation were produced by North America Electric Lamp Co., reflectors by Fostoria Pressed Steel Corp., and switches are products of Wadsworth Electric Co., Inc. The installation was made by the company's staff electrician.



Battery of infra-red lamps speeds up final drying at Downs Carpet Co.

FIXING HOSIERY MACHINES

CIRCULAR MACHINES—Chapter X. Pattern Chains and Quadrant

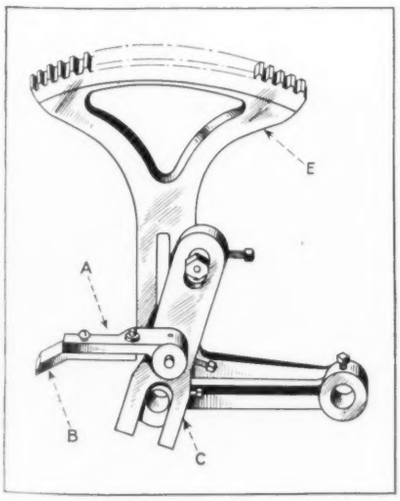
By JULIAN W. HUGHES

PATTERN CHAINS and driving mechanisms of circular hosiery machines, including the quadrant gear and the clutch with its shifting fork, are simple and generally are understood by all fixers. But because these parts are simple and give little trouble, they often are overlooked. On new machines, these parts usually are set up correctly and give no trouble; but when a machine has been running for a number of years, wear sets in and mechanical troubles begin to slip up on the fixer.

The pattern chain controls the actions of the various devices of the machine. Each link of the chain usually represents ½ in. in the length of the knitted article, so that the total length of the chain depends on the length of the hosiery to be knitted. It is quite clear that even a small amount of wear at each link will affect the knitting, especially when women's hosiery is being made.

The quadrant drives the cylinder in a reciprocating movement of one-half revolution during the knitting of the heel and toe, and in addition, it drives the chain ratchet by means of a pawl and plunger. In case of wear at these connections, there may be enough lost motion to disturb the timing.

Since the clutch is necessarily of the jaw type and is shifted back and forth between the rotating gear and the oscillating gear during the knitting cycle, there is considerable strain, as well as wear, on the clutch. Therefore, the clutch should be checked periodically for wear.



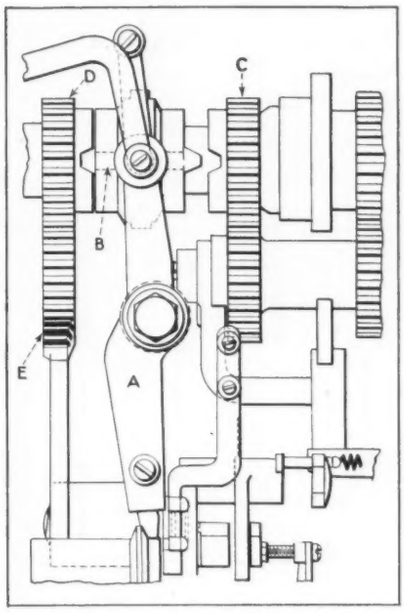
Hemphill Co.

Fig. C18. Quadrant gear

Because of its length, the chain idles over sprocket wheels which are fastened to brackets suspended under the machine. Slots in the brackets allow vertical adjustment of the sprocket wheels in order to accommodate various chain lengths and to take up the natural wear of the links. Sometimes the sprockets are set so that the chain is entirely too tight. The friction which is created consumes more power and increases the wear on each link of the chain; also, the chain is made slightly longer, tending to cause inaccurate functioning of the lugs and connecting pawls. The correct tension on the chain is that which is just enough to keep the links from slipping off of the sprocket teeth.

Because the length of pattern chain is determined by the type and style of hosiery to be made, it is important to make sure that all machines on the same style are set up identically and that all have the same number of links per chain. Style changes on knitting machines are sometimes made in a hurry, and this often causes mistakes in counting the links. In fact, irregular lengths in the foot and leg of hosiery have been traced to variations in links per chain. To eliminate this, it is a good policy to count each chain twice to make sure it has correct number of links.

The chain ratchet is mounted loosely on the pattern shaft and is driven by the chain pawl throughout the knitting cycle. The pattern shaft which carries the several pattern cams is driven by an auxiliary pawl and ratchet; it moves intermittently and makes one complete revolution with each knitting cycle. Since part of the auxiliary pawl rests on the chain and is acted upon by lugs carried by appropriate links, it is important to watch for wear on this part, which often is referred to as the lifter plate. A lifter plate that is badly worn leads to various kinds of trouble, because the lugs cannot act upon the pawl so that it can engage the pattern shaft ratchet properly. The lifter plate should be kept smooth and free from nicks and burrs; and, when ground, great care should be taken that its original shape is preserved; it should be ground lightly lest the metal heat and lose its temper.



Hemphill Co.

Fig. C19. Clutch and gearing

QUADRANT AND CLUTCH. When a machine has been running for several years, the quadrant gear should be checked periodically for wear and consequent lost motion. The quadrant runs constantly and gives little trouble if well lubricated, but it is easy to forget; the accompanying illustration represents a common type. Referring to the illustration (Fig. C18), the quadrant, as it is moved to and fro by the pawl *A*, imparts motion to the chain ratchet. The pawl plunger, *B*, naturally tends to wear at the point where it contacts the ratchet teeth. If this wear is neglected, it can become so pronounced that the plunger skips an occasional tooth on the ratchet. To prevent this, keep the plunger point dressed down to the correct angle. When the plunger is dressed down, it is made shorter; the fixer should never forget to set it forward to compensate for the decreased length. For minimum wear and most accurate knitting, the stroke of the pawl should be just sufficient to advance a tooth at a time without any lost motion; the length of stroke is regulated by raising or lowering the pawl support, *C*.

The clutch and associate gearing is illustrated in Fig. C19. The clutch is keyed to the shaft, but is free to move either to the right or to the left when

acted upon by clutch lever *A*. Notice the key which runs across the clutch at *B*, and the projections which fit into recesses in pinions *C* and *D*. Pinion *D* meshes with the quadrant gear and supplies the oscillating motion when engaged with the clutch. Pinion *C* meshes with intermediate gearing connected with the main driving pulley and supplies the rotary motion when engaging the clutch.

However, if the clutch does not engage completely with both pinions, but remains a fraction of an inch away from either pinion after the shift is made, then either the shipper cams on the pattern shaft, the stud on the clutch lever, or the clutch fork will be worn.

If the clutch begins to show signs of wear, the life of clutch insert keys and pinions can be lengthened greatly by advancing the shipper cam drum to offset late shipping of the clutch lever. The clutch fork and lever studs should be kept as free as possible of lint, grit, and other foreign matter, and should be oiled regularly.

FULL-FASHIONED MACHINES (Chapter IX contd.) The Coulier Motion

By WALTER A. SIMOND

FOR THE COULIER MOTION TIMING, the writer quotes the following suggestions made by a skilled erector of the Textile Machine Works staff: "Set the draw a little early at the clutch on the camshaft; then turn the machine until the last sinker in a head is fully drawn; set a 0.25-in. thick block gage on the top of the sinker butts; put a correct filler piece between the clutch and Coulier pinion gear—on Reading machines it is 1/16 in. for long-needle machines, and ⅛ in. for short-needle machines. Next loosen the clutch and turn the machine until back of the block gage and the front of the block gage and the front of the sinker butts are in the same place; then lock the clutch on the camshaft. When the Coulier motion is timed in this manner, it can always be returned in the same way to its correct position, thus avoiding the resetting of the rocker cams to bring them into right relations with the reinforced portions of the knitting.

Textile Machine Works

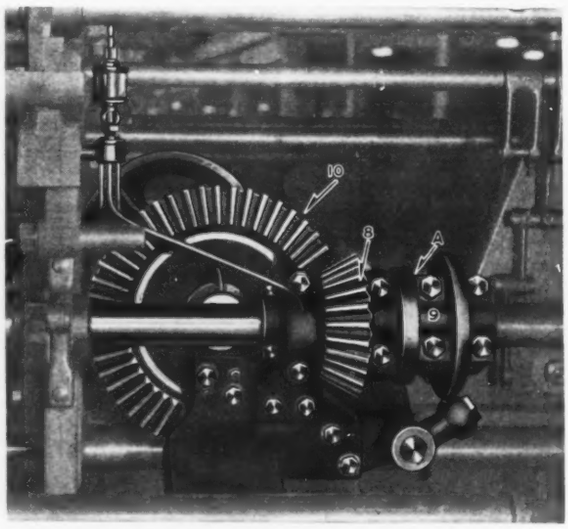


Fig. F18. Coulier motion bevel gears

"Whenever the clutch is reset on the camshaft, in machines having a band brake for the Coulier motion, the tension of the brake tends to force the clutch toward the pinion gear, and the use of the thin filler prevents the lateral misplacement of the clutch. When the clutch is too close to the pinion, the clutch has to move too far to release the Coulier motion for narrowing, and the pitman roller may pass over the high point of the Coulier cam; thus leaving the long Coulier lever free and allowing movement of the narrowing racks to move the friction rod and carriers, damage sinkers, and spoil selvages. Usually such a wrong carrier movement will take place in the heel narrowings at the inside selvages; but sometimes it happens in the leg narrowings, and the carrier rods move away from their stops. In such a case, move the clutch away from the pinion the correct distance without turning it on the camshaft; put in the filler; and then lock the clutch. The relative timing with the camshaft will not be changed, but the Coulier motion will make an earlier stop on the high point of the Coulier cam."

THE COULIER BRAKE ADJUSTMENT must be correct to obtain satisfactory results in knitting and narrowing. When the Coulier friction is applied to the back of the Coulier gear, it should be just heavy enough to prevent backlash of the gear teeth; and the back of the gear must be kept dry to prevent loss of friction. The conical-ended collar on the camshaft of Schubert & Salzer and some other types of machines ought to be set just close enough to the lever to prevent jamming of the locking dog or lever, yet so as positively to stop the Coulier motion with the pitman roller on the high point of the Coulier cam. If this collar is set too close, breakage of parts may result. Test this setting by stopping the machine in the narrowing to make sure that the lock does not bind in that position of the machine.

A similar collar is employed on earlier models of Reading machines to apply the brake-band tension, but the latest models have a conical cam that is an integral part of the clutch-coupling, the lateral setting of which on the camshaft must be carefully maintained (See Fig. F18). Ill effects of poor brake adjustment cited in the March-April 1934, *Reading Record* are as follows:

"The Coulier brake, if loose, will result in uneven slurcam movement in a great many cases; and sometimes cause breakage of gear teeth at the end of the Couliering stroke, or knockover. While this brake is only intended to apply actual braking force to the Coulier motion during a narrowing or lace-forming operation, it should be tight enough at all times to prevent vibration or backlash of the gear. Always be sure that the brake band is riding slightly on the bevel gear. This brake band should be free from oil and grease; when any is found there, it should be removed immediately.

"When the sinkers are driven forward in a spasmodic manner by the irregular action of the Coulier motion, there is a tendency for the nose to vibrate excessively. Such vibration slowly causes crystallization of the metal and finally reaches the point where the nose snaps off. Consequently, it is important that the Coulier motion function in a smooth and uniform manner. The desired movement can be hindered by: (1) slurcam boxslides too tightly on the guide bar (See Chapter VII in the February, 1941, issue of TEXTILE WORLD for more complete detail); (2) frictions not properly cared for; and (3) heavily worn teeth in the bevel gear."

Textile World
JUNE, 1941

New Era in New England

EDITORIAL INTRODUCTION BY DOUGLAS G. WOOLF

EVERYBODY has been defeatist about New England except New Englanders themselves. They don't know what defeatism means.

But, being realists, they will admit that they have had a tough two decades in the 1920's and the 1930's. They witnessed the loss of a good part of their cotton manufacture. It is difficult to hide empty mills—and New Englanders haven't tried to hide them. They faced them.

The result is what this special section of TEXTILE WORLD is all about. For now industries are going into New England, instead of going out.

But New England is not kidding itself. It does not expect the return of great staple-goods manufacturing plants. It does not hope to compete with lower-cost areas in the production of print cloths and carded yarns, for example. Instead it is welcoming—in fact, enticing—a myriad of small, specialized industries which are gradually filling up the vacant buildings—and spreading out into buildings of their own.

What is responsible for this renaissance?

First, the pendulum was bound to swing back some time.

Second, and more important, New England has been engaged in a frontal attack upon its own problem, through cooperative enterprises—the New England Council and the State and City industrial development commissions.

Third, and still more important, the New England spirit is something which will not be downed.

What of the future? Just this: New England has more heroic measures ahead of it. It has not arrived; it is merely on its way. Specifically, its manufacturers may have to perform further major operations on their plants and products; they may have to "shrink and sell," as this writer put it a decade ago. Some companies may even have to raze their plants and start again from scratch on the building of plants designed specifically to meet the requirements of new processes and new materials.

Municipal and State governments in New England will have to lend all reasonable aid to the fostering of this new industrial spirit, indispensable to the lives and security and happiness of New England's citizens.

Other sections will have to recognize the importance of the re-building of New England.

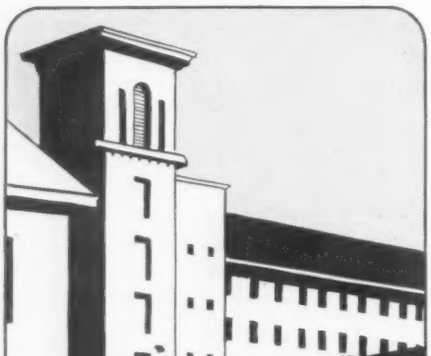
THERE WILL ALWAYS BE A NEW ENGLAND. And today New England has entered a new era. That new era will not encroach upon the destiny of the South or the West or any other section of this country. On the contrary, it will contribute to their progress through the re-assertion of a balanced national economy.

It is now well understood through the experience of the last decade that depression in Fall River, Mass., or in Greenville, S. C., cannot be a local affair. Our economic welfares are so interwoven that local manifestations have national repercussions. Our unity as a nation, in defense of all that we hold dear, makes that fact, today, dramatically apparent.

And so, citizens above and below the Mason and Dixon line will hail with equal joy the New Era in New England, summarized in the following pages.

Textiles Foremost in New England Revival

BY WINN W. CHASE, *Associate Editor*, Textile World



Along the banks of the Merrimack and the Blackstone; in Fall River and in Manchester; in scores of mill towns and cities, there is evidence of a New Era in New England. Where a few years ago mills stood silent and abandoned, one can again hear the hum and whir of busy machinery. Where once huge brick and granite structures housed the thousands of spindles of a single cotton manufacturer, and then for a time were vacant, one now senses the throb and activity of a score or more of smaller and diverse enterprises. Where along cobble-stoned streets sturdy horses formerly pulled drays loaded high with cotton bales, now over cement highways motor trucks speed cases of rayon yarn to weaving mills. Where woolen and worsted mills a little while ago were quiet and dark, now the clatter of looms and lighted windows tell of business raised to a peak by defense orders. These are some of the signs of the New Era in New England.

New Enterprises

NUMEROUS SMALLER ENTERPRISES established in mill buildings vacated by large companies which went out of business during the decline of the cotton industry constitute one of the most striking changes apparent in New England. The catastrophic effects of that decline are well known. With the closing and liquidation of over 200 cotton mills, thousands upon thousands of workers were deprived of employment; stockholders' equities in many instances were wiped out; purchasing power was depleted and standards of living were lowered; the financial security of whole communities was imperiled. Then mill doors which had been closed again were opened. From within the buildings began to come sounds of new and different enterprises.

IN MANCHESTER, N. H. is found an outstanding example of this influx of new companies. After the bankruptcy court recommended the liquidation of Amoskeag Mfg. Co., in 1936, all the property was purchased by Amoskeag Industries, Inc. With 13 directors representing local financial and business institutions, this corporation had as its purpose the gradual and orderly liquidation of the properties through sale or lease of mill space and machinery. To attract new industries, the organization provided liberal credit and expert advice on plant layout and machine installations.

Today 73 companies are located in the Amoskeag mills. These companies employ 6,495 workers or nearly one-half the number employed by Amoskeag Mfg. Co., in its heyday. Of 7,000,000 sq.ft. of floor space originally available, only 1,200,000 is vacant.

There are now 15 principal textile companies at Amoskeag employing approximately 3,500 workers and occupying some 3,500,000 sq.ft. of floor space. These companies include manufacturers of cotton mop yarns, cheesecloth, and gauze; worsted yarns and fabrics; blended yarns; rayon fabrics; interlinings; sweaters and other knit goods; shoe threads; and dyers and finishers of knit goods. Aside from primary textile companies, there are concerns doing roll covering, repairing textile machinery, producing bleaching materials, and making garments. Among non-textile companies are manufacturers of shoes, electrical apparatus, heat-treated steel shot and grit, wooden handles for screwdrivers and other tools, etc.

IN LAWRENCE, MASS., Everett Mills Properties, Inc., presents a story similar to that of Amoskeag Industries, but differing in several important respects. The original Everett Mills, which liquidated some 12 or 15 years ago, employed 1,500 workers. The 75 or more companies now occupying the properties employ a total of 4,000 workers. Whereas at Amoskeag textile manufacturing continues to be the primary industry, at Everett Mills garment manufacturing and shoe manufacturing hold first and second place. Textile companies include a knitting mill, two weavers of corset cloth, and a fabric-coating concern. Also there are two textile machinery companies and a manufacturer of artificial leather. A great variety of other industries are represented—there is even a company which makes macaroni. Originally the mills contained 1,500,000 sq.ft. of floor space. Since Everett Mills Properties, Inc., took over seven years ago, a third of this has been sold outright, and 90% of the balance has been rented.

IN HOLYOKE, MASS., is a third example. Here properties of Farr Alpaca Co., comprising two groups of buildings with 1,250,000 sq.ft. of floor space, were taken over in May, 1940, by a company which specializes in liquidation of textile mills. A year later ap-

proximately one-half the space (over 300,000 sq.ft.) in so-called Mill No. 1 had been rented to six companies—four rayon weaving concerns, one producer of worsted fabrics, and a razor manufacturer. At present 1,500 workers are employed by these six companies, as contrasted with 3,500 formerly employed by Farr Alpaca.

FALL RIVER, MASS., has made a phenomenal recovery after the crisis brought about by the closing of many of its cotton mills. In 1931 the financial condition of the city was so bad that the State of Massachusetts assumed control of its financial affairs. Cotton mills in 1932 represented only 14% of the assessed valuation of Fall River, as compared with 55% in 1920. Then the Chamber of Commerce and the State Finance Board took steps to secure new industries to take the place of those which were gone.

How successful these efforts were is shown by the fact that in the years 1932-1940 practically 100 new industries were established in Fall River, the great majority locating in cotton mills which had been shut down. Of these 100 concerns, 25 were textile companies—silk and rayon weavers, narrow-fabric mills, dyeing and printing plants, a thread manufacturer, a knitter, two weavers of pile fabrics, etc. With one exception, these companies are of small or medium size, each employing from 25 to 200 workers. Together they provide employment for 3,000 to 3,500 people. In addition to the primary textile companies, other new establishments in Fall River include some 40 concerns manufacturing men's, women's, and children's garments. They employ about 5,500 people.

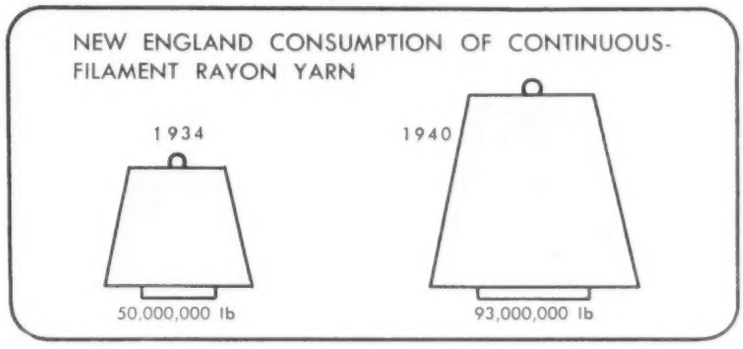
Largest of the non-textile companies is Firestone Rubber & Latex Products Co., which acquired the buildings of American Printing Co. in 1937 and gave employment to 800 to 900 workers. The other new non-textile companies produce a variety of products, such as bedspreads, mattresses, curtains, hats, paper boxes, roll covers, oil filters, painted furniture, machine guns, macaroni, sausage, and ice cream cones. These companies employ another 1,500 to 2,000 workers. The beneficial effect on the city produced by the establishment of 100 new companies, the reemployment of some 10,000 to 12,000 workers, and the diversification of industry can easily be visualized.

LOWELL, MASS., has experienced a change which parallels to some degree that of Fall River. In 1923 the cotton mills of Lowell employed more than 11,000 workers; in 1932, less than 2,000. Today there are only two companies weaving cotton cloth. Some mills have been torn down to reduce taxes, and the spaces they once occupied are open and unused. Other mill buildings stand vacant. Some have been converted into garages. Still others are occupied in whole or in part by several smaller concerns. Many of these companies are very small; one or two are large, employing nearly 1,000 workers. The new companies include woolen and worsted mills, rayon weaving mills, knitting mills, and a wide variety of non-textile concerns. Although Lowell is now a city of diverse industries, it is still predominantly a textile city. However, manufacture of woolen and worsteds and of knit goods has outstripped that of cotton goods, and production of rayon fabrics does not lag far behind.

IN NEW BEDFORD, MASS., the closing of 12 cotton mills between 1925 and 1935 caused a serious slump in industrial activity. However, due to the fact that many of its mills specialized in production of fine goods, New Bedford suffered less than those New England cities in which manufacture of coarse goods was predominant. As the need for new enterprises was not so acute, less effort has been made to secure a large number of new industries. Rather, the philosophy of the Industrial Development Legion has been to encourage the establishment of a smaller number of medium-and-larger-size companies. Among the 19 concerns which have located in New Bedford in the last few years are included three or four textile companies, a canner, and a manufacturer of electrical equipment. Together the new companies employ over 5,100 workers.

With certain variations, other cotton manufacturing centers of New England have undergone and are undergoing similar changes to those cited above. This is particularly true of the influx of new enterprises, some of which are closely allied to the textile industry. A few outstanding examples are recent purchase of the Ashton (R. I.) Mill of Lonsdale Co., by Owens-Corning Fiberglass Corp., for production of Fiberglas; acquisition of one unit of Ponemah Mill of Taftville, Conn., by Aratex Corp., to permit expansion of casein fiber production; and taking over by Flax Processing & Linen Co. of space in the Joseph Benn Corp. plant, Greystone, R. I., for manufacture of linen products.

Rayon Weaving



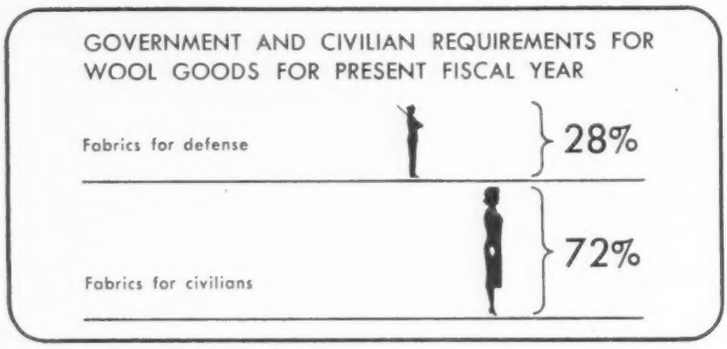
STEADY GROWTH of the rayon weaving industry — particularly in Massachusetts, Rhode Island, and Connecticut—has contributed greatly to the comeback of New England. From 1934 to 1940 annual consumption of continuous-filament rayon in New England jumped from 50,000,000 lb. to 93,000,000 lb. In a one-year-longer period (1933 to 1940) the number of employees in the rayon and silk weaving industry in New England increased from 27,000 to an estimated 33,000. In that section there are approximately 30,000 looms operating on rayon. Last year these looms produced in the neighborhood of 600,000,000 yd. of broad goods valued at about $140,000,000.

The greater part of this yardage consists of staple fabrics, such as taffetas and twills, and is being produced in mills which formerly manufactured cotton goods but which in recent years have devoted part or all their facilities to production of rayons. Examples of such mills are Androscoggin, Bates, and Cabot, in Maine; Suncook in New Hampshire; Gosnold, Hathaway, Pepperell, and Paul Whitin in Massachusetts; Manville-Jenckes, Warwick, Greenhalgh, and Lorraine in Rhode Island; and Ashland and Ponemah in Connecticut. In addition, several of the silk companies, such as Cheney, Newmarket, and Skinner, are now producing rayon fabrics. Then there are some 20 smaller plants, with 100 to 500

looms each, which have been established in recent years specifically for weaving rayons. With consumption of rayon steadily increasing, the rayon weaving industry in New England undoubtedly will continue its rapid growth for the next several years.

Production of spun-rayon fabrics on the cotton system has increased rapidly, but no authoritative figures are available as to the number of yards woven. Indicative of the rate of increase is the fact that consumption of rayon staple by several mills jumped from 2,200,000 lb. in 1937 to 8,800,000 lb. in 1940. Consumption of rayon staple last year in New England—aside from that used by woolen and worsted mills — was probably somewhere between 15,000,0000 and 20,000,000 lb.

Defense Activity



THE TONIC EFFECT of the defense program on the textile industry is visible throughout New England; but is most conspicuous in woolen and worsted manufacturing centers. At the beginning of the year it was estimated that Government purchases were resulting in a 32% monthly increase over normal sales of wool goods. To supply the huge demand for uniform cloths, overcoatings, blankets, etc., woolen and worsted mills are running two and three shifts, at full capacity. Plants long closed have been reopened, new equipment is being installed as quickly as it can be obtained, facilities are being expanded by erection of new buildings.

Cotton-mill operations have also been stimulated by defense orders, although to a lesser extent as demand has been mainly for coarse goods, rather than for the fine goods produced in New England. Call by the Army and Navy for socks, underwear, and other knitted products has benefited the knitting industry; growing demand for parachutes and for powder bags has meant more business for silk manufacturers who are equipped to produce fabrics suitable for those purposes; orders for vat-dyed fabrics and special finishes have increased finishing-plant activity.

More and more the textile machinery manufacturers of New England are feeling the effect of the defense program. Not only are they endeavoring to meet the increased demand for textile equipment for modernization and expansion, but also many are engaged in defense projects.

Decline Arrested

FURTHER EXODUS of the textile industry from New England has been halted, for a time at least, by the urgencies of the defense program. From 1922 to 1940 the number of cotton spindles in New England dropped from 18,930,000 to 5,884,000, a loss of 13,046,000. Meanwhile in the South the number rose from 16,458,000 in 1922 to 19,345,000 in 1935 (a gain of 2,887,000) and then fell off to 18,135,000 in 1940. During the 1920's some 35 or more New England cotton manufacturers set up branch plants in the South and moved part or all of their equipment to these plants. In addition, a considerable amount of machinery from New England cotton mills that were liquidated was purchased by mills already established in the South.

One of the reasons for the shrinkage of the cotton industry in New England was the fact that many companies had failed to keep abreast of technological developments and attempted to compete with obsolete machinery against the more modern and efficient equipment installed in the newer mills of the South. On the other hand, practically all the cotton mills which are still continuing to operate in New England have been brought fairly well up to date by installation of modern machinery. There is still some obsolete equipment in operation and there is still some further liquidation of mills to be expected. But, by and large, the physical equipment of the remaining cotton mills in New England is better than the average for the country. For this and other reasons, it appears that any further large reduction in the size of the New England cotton industry is not likely to occur in the next several years. Neither does there seem to be any likelihood of expansion of cotton manufacturing facilities except in special cases, such as the complete 960-spindle spinning mill recently installed in one of the company's old plants by Powdrell & Alexander Co., for producing the clip yarn employed in manufacture of clip-spot curtain materials.

The great rise of cotton manufacturing in the South came through establishment of new plants during a period of rapid expansion of the cotton industry as a whole. And there are no signs that the woolen and worsted industry will undergo a similar expansion. Therefore, any marked growth of the woolen and worsted industry in the South, or elsewhere, would have to be brought about by actual migration of the industry from New England. For numerous reasons such a migration seems unlikely.

Modernization

FOR REDUCING COSTS, improving products and otherwise increasing plant efficiency the importance of modern equipment has become widely recognized among textile manufacturers in New England. As a result, in recent years they have spent hundreds of millions of dollars on the installation of new machinery. Following this article are several case studies showing what individual companies in various branches of the industry have done to modernize their plants. The modernization jobs described are not the biggest ones which have been carried out, but they are typical.

Merely a list of all the companies which have embarked on large-scale modernization programs would fill many pages. Just a few in the cotton and rayon field which have done particular outstanding jobs are Hathaway, Pepperell, Nashua, Warwick, Boston Duck, and Berkshire. Among those in the woolen and worsted end are American Woolen, Worumbo, Uxbridge, Arlington, Paragon, and Branch River.

Closely akin to modernization of equipment is the development and adoption of new methods and processes.

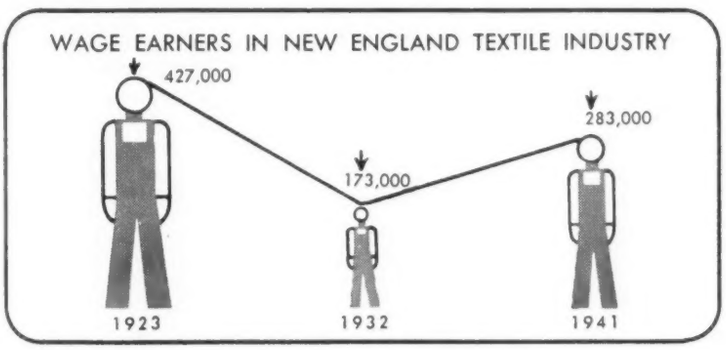
Here Yankee ingenuity and inventiveness have come into full play. An example of this is the drying-cleaning process for wool goods developed at the M. T. Stevens plant. Another is the new method and equipment worked out by Atlantic Rayon Corp. for headless-package twisting of rayon yarns. Still another is the method evolved by Kendall Co. for producing a soft, lintless woven fabric for use as a dusting and polishing cloth. Then there is the process developed by United Cotton Products Co., which makes use of the principles of rubber, paper, and textile equipment for making fiber-like materials suitable for book covers, luggage cloth, and other applications.

Finishing companies of New England have been particularly active along these lines. Thus, Mount Hope Finishing Co. recently announced the Watar-Set finish for cotton and rayon fabrics and is actively promoting it through sales helps to retailers and consumer advertising. United States Finishing Co. has brought out a number of new finishes, including the Vitalized finish for imparting permanent body and resiliency to spun rayon and other fabrics. Arnold Print Works has adapted an electrostatic process for applying cut fibers to cloth to printing of dress goods and other fabrics. Pacific Mills has developed a specially treated fabric which, made into bags or other containers for silverware, prevents tarnishing.

These are but a few of the new processes and new products which have come out of New England textile mills in recent years. Many others could be mentioned, as well as the large number of new developments in textile equipment which have been contributed by the machinery manufacturers in that section.

Linked with the modernization of equipment and the development of new products is the aggressive merchandising policies which have been adopted by countless New England textile companies. One phase of this is the development of informative labels, in which the lead has been taken by such companies as Pacific Mills, Pepperell, American Woolen, Arlington, and Wm. Carter.

What of the Future?



NUMBER OF WAGE EARNERS in New England textile mills in 1932 totaled about 173,000. In 1939 the number had risen to 253,000. In March, 1941, due largely to defense activities, it had increased to approximately 283,000. Whereas the figure is still far below the peak year of 1923, when there were approximately 427,000 wage earners, the re-employment of 112,000 wage earners plus some 10,000 salaried employees has resulted in a vast improvement in conditions in many towns and cities.

This does not mean that all the old problems which confronted the New England textile industry have been solved, nor that there will be no new problems to face in the future. For example it is recognized, that sooner or later defense buying will cease and that major readjustments will be necessary.

Again, the increasing utilization of rayon staple fiber demands the most serious consideration by woolen and worsted manufacturers. Last year 99,000,000 lb. of rayon staple were consumed in this country. Those qualified to make the shrewdest guesses are banking on it that within another 10 years consumption will be at the rate of at least 500,000,000 annually. Cotton mills, particularly in the South, have commenced to install special spinning, weaving, and other equipment for making spun-rayon fabrics — some of them directly competitive with men's and women's wear fabrics produced by woolen and worsted mills. As larger quantities of rayon staple become available, it is virtually certain that it will be widely employed in outer-apparel for the large middle- and lower-income groups, in blankets, and even in upholstery and floor coverings.

The fate of the old-line silk mills which refused to see the potentialities of continuous-filament rayon is known to all. Woolen and worsted manufacturers, if they are to escape a similar fate, must adapt their methods and equipment to handling rayon staple.

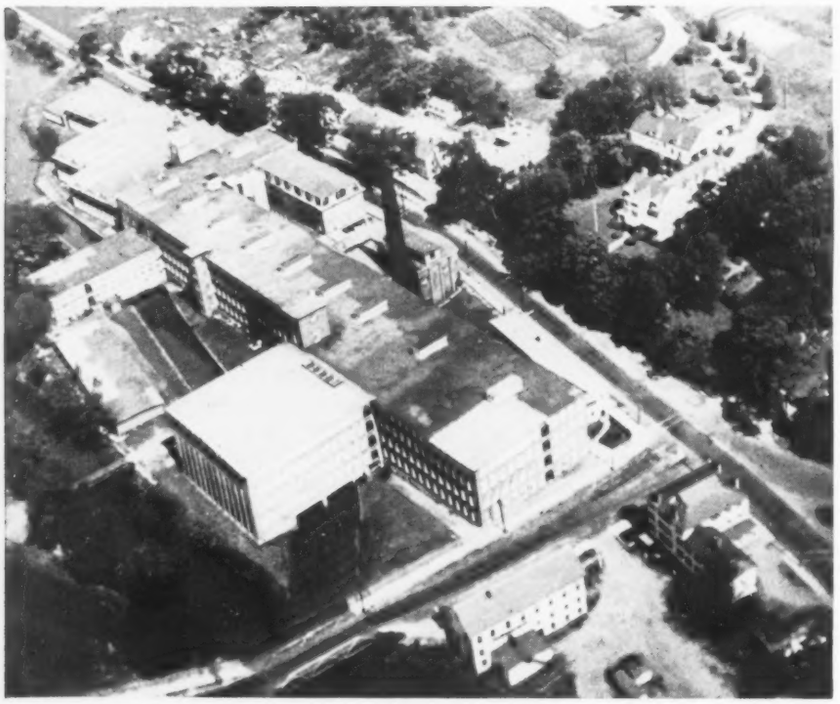
Although several of the factors which led to the growth of the southern cotton industry at the expense of New England are less important now than they were a few years ago, they still have to be considered. Wage rates are higher in New England than in the South; labor laws are more stringent; taxes generally are higher. Every New England textile manufacturer would like to see an easing off of local and state taxation. Few hope for or desire the lowering of wage rates to those of competing sections of the country. The majority take pride in the social gains which followed the enactment of various labor laws and, while they believe certain modifications would be beneficial, they do not advocate outright repeal of such laws.

But much has been done in all the New England States in recent years to create and to maintain conditions which are favorable to profitable industry. The revival of the textile industry began some time before the start of the defense program, and there is no perceptible reason why the influx of new and diversified textile companies and the growth of the rayon weaving industry should not continue long after the temporary defense boom has passed. Therefore, it is with more optimism and greater confidence than they have felt for many years that New England textile manufacturers face the future at the dawn of this New Era.

THE AUTHOR WISHES to express his gratitude to all those who have assisted him in the compilation of the factual data on which this article is based. Among those to whom special thanks are due are Ray Hudson, of the New England Council; Russell T. Fisher, of the National Association of Cotton Manufacturers; Charles Whitney Dall, of the National Rayon Weavers Association; Frank W. Dunham, of the Fall River Chamber of Commerce; A. O. Roberts, of Amoskeag Industries, Inc.; Russell W. Knight, of Everett Mills Properties; Robert L. Gilman, of Consolidated Products Co.; Theodore A. Haish, of the Industrial Development Legion of New Bedford; and Howard S. Knowlton, New England Editor, TEXTILE WORLD. Certain of the data on Lowell, Mass., were abstracted from the book "Lowell, a Study of Industrial Development," by Margaret T. Parker, Macmillan Co., 1940.

Paul Whitin Revamps to Run Rayon

BY HOWARD P. GALLOWAY, *Assistant Editor*, Textile World



Airplane view of Paul Whitin Mfg. Co. plant at Northbridge, Mass.

MODERNIZATION AND EVOLUTION form a two-man team at the Rockdale Mills of Paul Whitin Mfg. Co., Northbridge, Mass. The company is continuously modernizing its equipment, plant layout, and processing methods, as experiments indicate which of the newer developments are best suited to its needs. Evolution of textile raw materials is also continuously studied, so that the mill can be constantly aware of what are the possibilities of the newer materials, and where they are likely to fit into the textile picture as a whole.

That is one reason why, although there has been a textile mill of one kind or another on the Whitin site for more than a century and a quarter, today's mill is one of the most modern, up-to-date, and successful enterprises of its type. That is one reason why, although the plant was at one time given over to woolen manufacture and at another to cotton, present capacity is largely devoted to filament-rayon fabrics. Some spun-rayon cloths, and some fabrics comprising both filament and spun yarns, are also being made, as are certain fine combed-cotton leno fabrics. Marquisette curtains, dress goods, underwear fabrics, linings, and shirtings are among types of fabrics currently produced in large quantities. Spun-rayon yarns are in growing demand, and at the present time nearly the entire spun-staple output is sold in yarn form.

During 1933, a separate department for handling staple was set up. For preliminary processing two pickers are used. One of these is an older machine, the other is a new Whitin picker.

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Prominent among New England textile mills which have gone over largely to manufacture of rayon fabrics is Paul Whitin Mfg. Co. This article describes introduction of facilities for spinning rayon staple, and modernization of filament rayon twisting and weaving departments.

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The Borne Scrymser Tintinol system is used for identifying stocks. Forty Whitin cards are used on rayon staple; these are divided into two rooms of 20 each, so that blends of different types can be segregated and possibility of contamination due to fly minimized. Twenty of the cards are equipped with fancies, so that they can handle wool and rayon blends. Each room has a number of drawing frames to complement the cards. Eight new 138-spindle Whitin Super-draft roving frames are also used. Most yarn produced ranges from 9s to 40s cotton count and is spun direct from these frames.

American Moistening humidifying heads are installed in both these rooms; and Taylor Instrument humidity recorders are used to produce weekly charts of humidity conditions.

FOR SPINNING ALL-RAYON yarns and blends containing 50% or more of rayon, sixteen 256-spindle conventional draft frames are utilized. For all-acetate staple and acetate blends, seventeen additional 256-spindle frames are used; these have been changed over from conventional to long-draft. Forty-eight more 256-spindle frames, ordinarily used for spinning cotton yarns, are curtained off so that they can be utilized for any overflow of rayon staple and blend spinning.

Two 120-spindle Universal Roto-Tubers have been installed, as have seven 60-spindle Roto-Coners. Also, there are sixteen No. 50 winders, which are used for doubling, and as standbys in case other equipment becomes overloaded. Other recent installations include fourteen Whitin twisters equipped with oil-reservoir wick rings which, the management finds, save oil, minimize oil-stained yarn, and help keep floors cleaner. For running small test lots, an experimental room is maintained. It contains two cards, one with a Bramwell feed; one four-delivery drawing frame; 36 spindles of 8x4 Super-draft roving; and a 48-spindle long-draft spinning frame.

Addition of rayon staple to the mill's list of raw materials made it necessary to augment humidifying and

Eleven 216-spindle U. S. Textile Machine Co. double-deck twisters have recently been installed for handling filament rayons

air-conditioning facilities, and last year new Ingersoll-Rand equipment was put in place. This draws in air, humidifies it, and circulates it to various departments throughout the mill.

FOR FILAMENT RAYON YARNS a special twisting department has been developed during the last five or six years. Forty frames of conventional type, aggregating nearly 8,000 spindles, have been changed over for use of cones by addition of new tension devices, a different type of top roll, and individual wick rings. Supplementing this equipment are eleven 216-spindle double-deck twisters, supplied by U. S. Textile Machine Co. and installed just a few months ago. Each is powered by an individual, vertical-mounted Diehl motor. Yarn is twisted from skeins, put on supply spools, twisted on to take-up spools, conditioned, rewound to bottleneck spools, and then warped.

Equipment for slashing includes two Saco-Lowell cylinder-type slashers and one of the hot-air type, and two Johnson seven-cylinder slashers. All the slashers have instruments for automatically controlling and recording temperature of size box and cylinders. Likewise, all are motor driven; the Johnsons are equipped with variable-speed drives, and speed of the others is controlled by means of cones.

Rooms in which low-twist filament rayon is wound and warped were air-conditioned a few years ago. Both temperature and humidity are maintained constant all year round. American Moistening Co. engineered this installation, the air washer was supplied by B. F. Sturtevant Co., and the refrigeration equipment is a product of Ingersoll-Rand. Three Sipp-Eastwood high-speed warpers are located in this room, and it is expected that soon there will be 210 spindles of Whitin-Schweiter automatic filling-bobbin winding. All yarn to be wound is conditioned for at least 24 hr. before winding; whenever possible, yarns to be warped are also conditioned for a similar period. An interesting feature of this room is a Link-Belt vertical conveyor used for delivery of cases of rayon yarn from trucks at the ground level to this third floor department. Use of this conveyor has cut time consumed in unloading from the 6 to 8 hr. required when hand trucks and ordinary elevators were used to about ½ hr. per truckload at present.

WEAVING FACILITIES have also undergone change at Paul Whitin. Originally, looms in this mill, as in many others, were placed very close together. In 1931 the situation became intolerable in what is referred to as the "lower" weave shed, and it was decided completely to modernize the room. The old looms were first ousted. Then, the floor of the room was raised 2 ft. This minimized danger of flood damage, and also made heating and humidification easier and more economical. Three hundred and twenty new Draper 40- and 44-in. looms were installed. Of these, 200 are XK Model; 120 are K Model. The entire unit is driven by individual Diehl motors; Mossberg adjustable steel beams are used on all the XK looms; and the entire group is equipped with Steel Heddle Co. harness and heddles. Plenty of space was left around looms, and warp trucks were constructed which obviate lifting of warps.

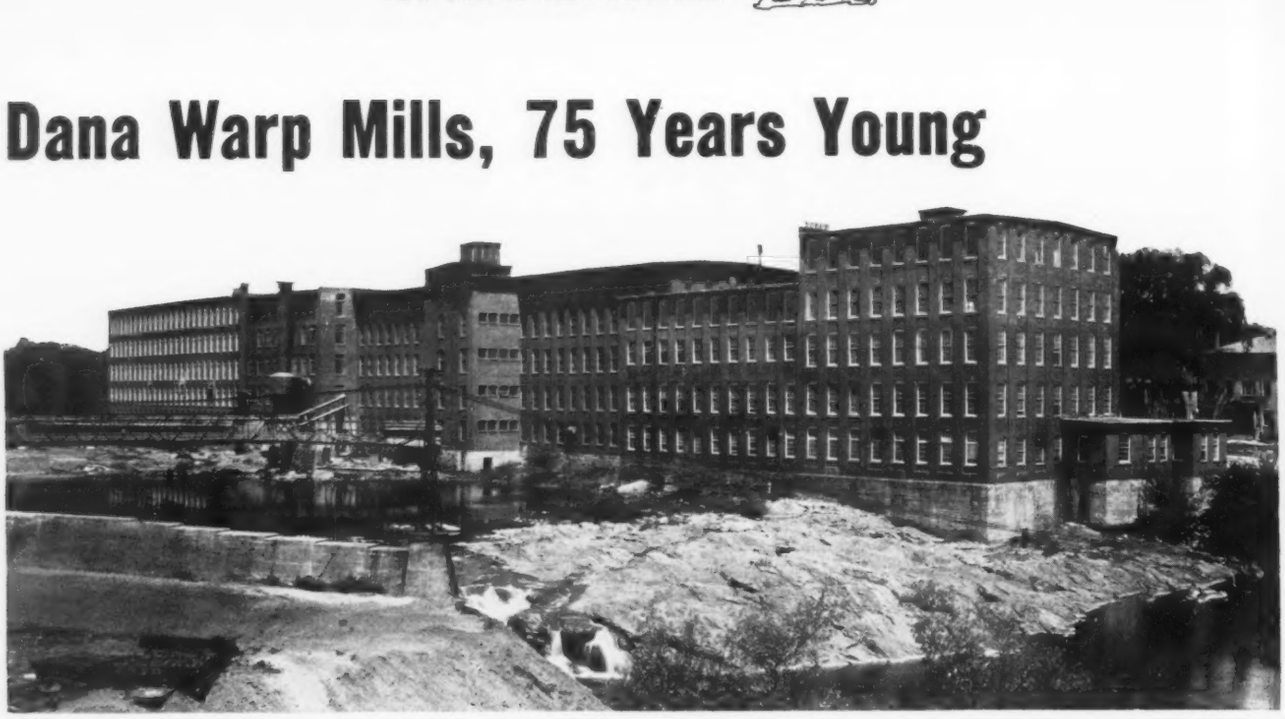
The second-floor or "upper" weave shed was next modernized. Here again, a new floor was laid, and 320 Draper K Model 40- and 44-in. motorized looms installed in late 1940. A portion of the looms in this unit have dobby attachments; the entire group is equipped for Alemite lubrication. A third, smaller weaveroom contains 84 Draper K Model motor-driven 40-in. looms, without dobbies. The other 148 looms in this room, of a variety of types and drives, are gradually being changed over to individual motor drive. All three weave sheds are lighted by Hygrade-Sylvania fluorescent lamps.

WORKING CONDITIONS of the 900 Paul Whitin employees are continually being examined and desirable changes and improvements made. For some time now, three portable dispensing machines have been in use. These tour the mill, and employees can buy milk, chocolate, etc., at a flat 5c. charge. Last year, individual employee lockers were installed; one is now available for each operative of each shift. Toilet facilities were likewise brought up to date in 1940. The modern versions feature, in addition to standard equipment, tiled walls, mirrors, and powder tables for women.

Accident prevention is an important consideration with the mill's management. Overseers hold safety meetings monthly with insurance company representatives, and every six months or so a second-hand safety meeting is held. Periodic mill inspections are made to discover any unsafe conditions which may exist. For times when, despite best efforts, accidents do happen, a well-equipped first-aid department is maintained.

The up-to-date first-aid department consists of an accident room, a rest room, toilet facilities, and a waiting room. A registered nurse is on duty eight hours a day

Dana Warp Mills, 75 Years Young



Main building of Dana Warp Mills, Westbrook, Me.

MANY CHANGES in yarn manufacturing technique have occurred in the 75 years which have elapsed since W. K. Dana built a 600-spindle mill on a little island in the Presumpscot River, at Westbrook, Me. And the continuous growth and success of Dana Warp Mills throughout the three-quarter century of its existence have been due to the fact that the owners and management have always been alert to those changes. Until he died in 1924, at the age of 84, Mr. Dana was constantly trying out new ideas and was invariably among the first to adopt those which proved to be practical and economical or which served to improve the quality of the mill's products. Luther Dana, who is now president of the company, and Philip Dana, who is treasurer, inherited that progressiveness from their father; and the same family trait is apparent in the case of Philip Dana, Jr., who recently became superintendent of the mill, when K. G. Stone, former superintendent, was made general manager. It is not surprising, therefore, that today the company has a country-wide reputation for the excellence of its products, nor that the mill itself gives visual evidence of a management which is fully aware of the value of modern equipment.

Best known as a manufacturer of warps for woolen and worsted mills, the company also makes a wide variety of other products. For example, it has made a specialty of novelty yarns, producing more than 1,200 different styles and numbers, including seeds, ratines, flakes, and boucles in cotton, cotton-rayon, etc.; these yarns are dyed with direct, sulphur, vat, or other classes of dyes according to the customer's requirements. Other products include cotton yarns for electrical-insulation purposes, rubber covering yarns, braiding yarns, core yarns for worsted and mohair, mop yarns, coarse cotton yarns for rugs, seamless bags, and wiper cloths. Quite recently production of knitting yarns was started.

A few years ago the executives of the company worked out a program for modernization of the entire plant and equipment. The plan called for rearrangement of machinery and departments, changing over of some machinery to long draft, installation of new machines wherever necessary, and bring auxiliary equipment up to date. Work was started in 1930, and has proceeded systematically ever since. The plan is well defined, but is not so rigid as to preclude any modifications which are deemed advisable from time to time. Thus far over $476,000 has been spent on new machinery alone, and the program is not yet completed.

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Among New Englanders, the State of Maine has an enviable reputation because of its unusual record of textile industry stability and well-modernized plants. It is particularly fitting, therefore, that the company selected for this case study of cotton-mill modernization should be the well-known Dana Warp Mills, of Westbrook, Me., now celebrating the 75th anniversary of its founding.

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THE FIRST STEP was the complete remodeling of the opening room and installation of the latest type openers. This room is so arranged that it is possible to lay out and mix as many as 40 bales at a time. Incidentally, the opening room is located in a building which is on the site of the original mill erected in 1866. After opening, the cotton is blown through a conveyor pipe to the picker room in the main building which is on the river-edge. When work in the opening room was completed, the pickers were changed over to the latest type.

The next step was the modernization of the dyehouse by installation of two units of stock dyeing machines to supplement the warp dyeing equipment then in use. Several years before two beam dyeing machines had been purchased which had proved suitable for some types of work but the new machines give greater flexibility and enable the company to turn out certain types of yarns which it had not previously produced. To extend its line still further, Dana also installed three package dyeing machines and two washers. A new laboratory, built at one end of the dyehouse, was fitted out with sample dyeing machines, Launder-Ometer, and other testing and control apparatus.

For manufacture of yarns from the stock-dyed cotton, separate picker,

card, and spinning rooms were installed. The purpose of this was to prevent contamination of other work from colored fly. Thirteen cards were purchased for carding the dyed stock, and the entire card room was rearranged at this time to obtain higher efficiency.

There is now some 5-roll drawing in place, and the plans call for putting in more of this type.

Previously, in 1934 or 1935, Dana had made what is believed to be the first commercial installation of controlled-draft roving, consisting of eight frames. Later two more frames were added, and ten others were converted to long draft. Some conventional-draft roving has been retained for special purposes where the reduction in number of processes made possible by long-drafting has not seemed desirable.

MODERNIZATION of the spinning began in 1922, when approximately 18,000 spindles of long draft were applied to frames then in operation. This was the largest single installation of that time. These are now being replaced with the latest model large-package long-draft frames at an expense of approximately $100,000. The new frames are individually driven and take the new paper bobbin. Among the advantages which have been derived from these frames are included reduction of spinning costs, evener yarns, fewer breaks, cleaner work due to absence of overhead shafting, and better and less crowded working conditions.

In 1933 and 1934 the latest improvements on long-draft spinning were applied to 17,760 spindles, bringing all the old-draft frames up to date.

During this period traveling cleaners, ten winders, and two high-speed warpers were installed.

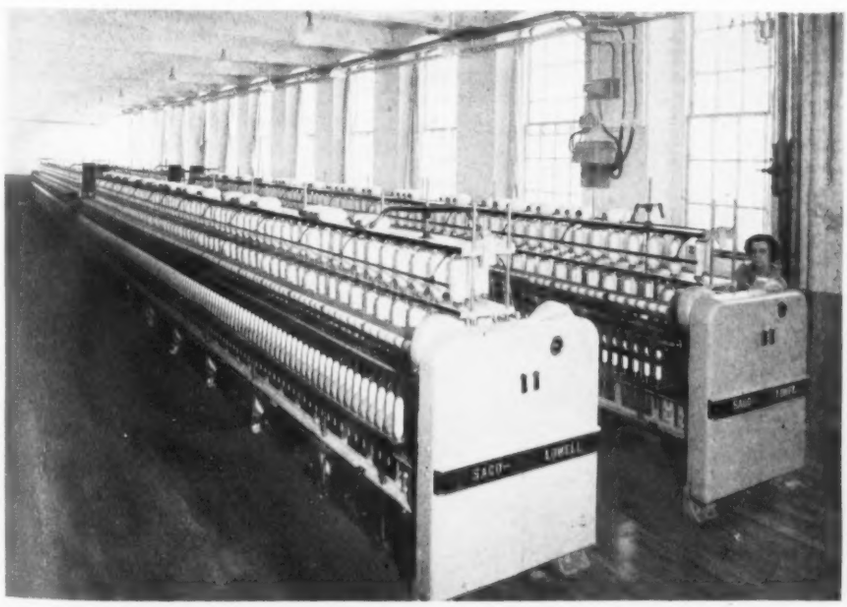
In 1940 the latest combing was installed, six combers replacing sixteen older models, resulting in a one-third increase in production and a saving in combing costs of 2¢ per lb.

Novelty attachments have been applied to 54 twisters, and moisture-control instruments on slashers have been installed where possible, giving better production and at the same time more satisfactory warps for customers.

During this period the working conditions for employees have kept abreast of the times.

At present Dana Warp Mills has somewhat over 38,000 spindles, employs about 650 people, and operates two 40-hr. shifts. Normal weekly capacity is approximately 95,000 lb. of yarn, but actual production has gone as high as 140,000 lb. As a rule, some 50% of the production consists of cotton warps which are delivered dressed on loom beams, chiefly to woolen and worsted mills in Maine. Now celebrating the 75th anniversary of its founding, the company is as vigorous as at any time during its life. As in the past, the management is always ready to try out new ideas and quickly to adopt those which will still further increase the efficiency of the mill or improve the quality of its products.

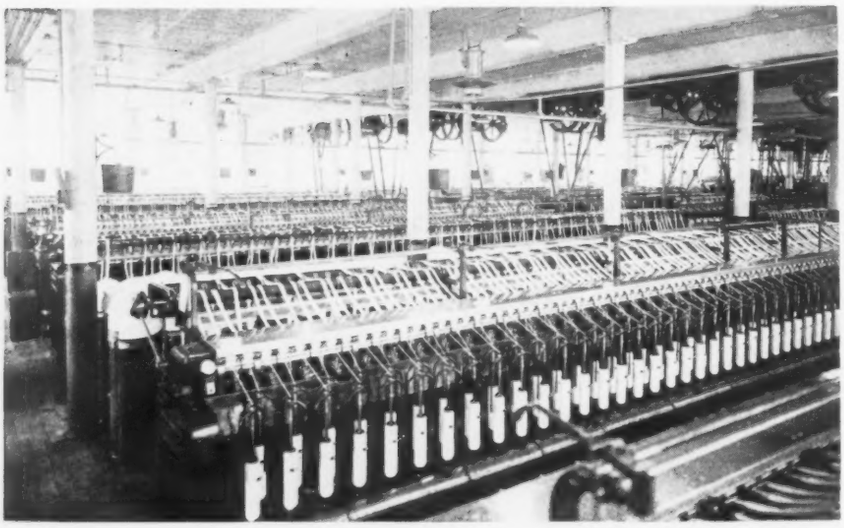
Rearrangement of card room, change-over of some roving frames to long draft, and installation of new equipment increased efficiency



Close-up of latest model spinning frames recently installed by Dana Warp Mills

View in raw stock and package-dyeing room

Millions Spent for Modernization



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Throughout New England, textile manufacturers are spending millions to modernize their mills for the purpose of reducing costs, improving quality, extending range of products, and bettering working conditions. Illustrated are several representative new equipment installations which have been made recently. These views show only a few of the many different types of modern machines which are contributing to the increased efficiency of countless plants. They do, however, give an indication of the important part played by mill modernization in the rejuvenation of the textile industry in New England.

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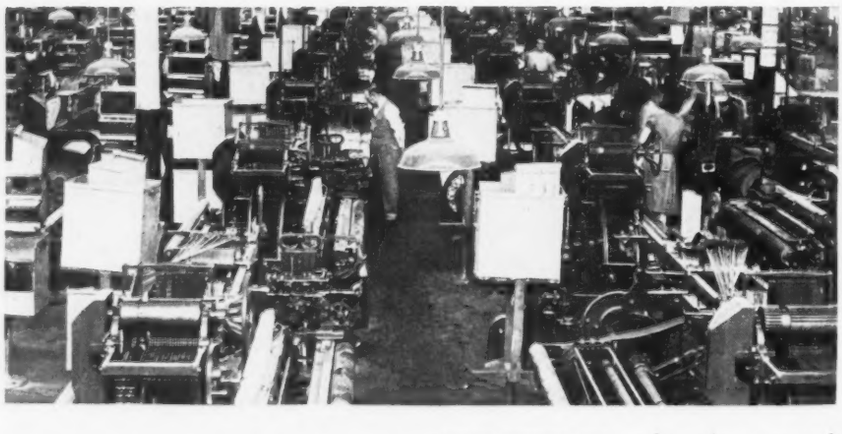
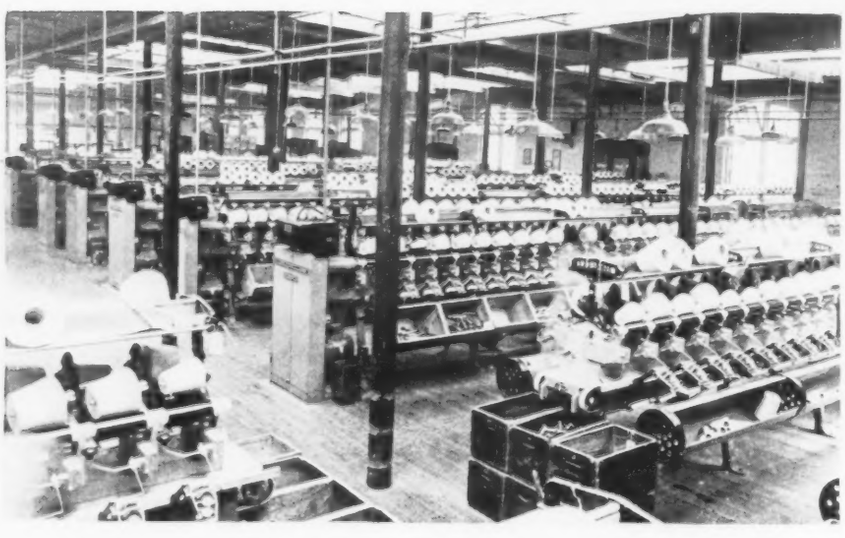
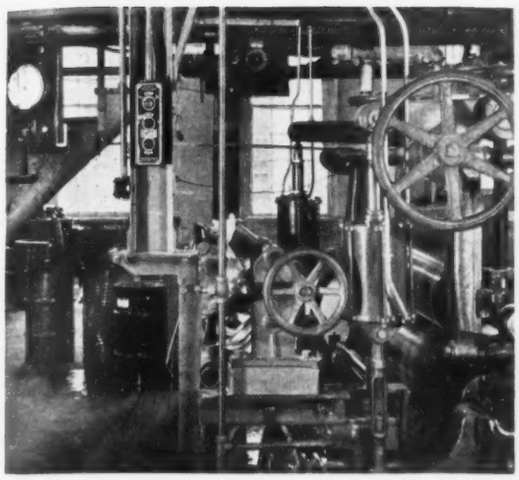
GOSNOLD MILLS CORP., New Bedford, Mass., is carrying out an extensive modernization program; photograph above illustrates part of installation made recently of H & B American Machine Co. long-draft speeders. Revamping of weave room is now in progress; 528 automatic looms at an estimated cost of approximately $500,000 have been installed or are on order.



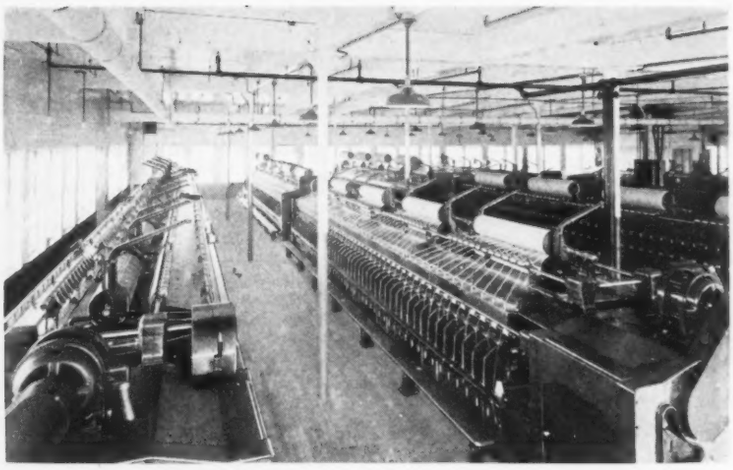


MODERNIZATION and product research have played important roles in the continued success of Arlington Mills, Lawrence, Mass. Illustrated above is a section of the weave room in which 240 Crompton & Knowles 82-in. W2 looms —40 of them convertibles—have recently been installed.

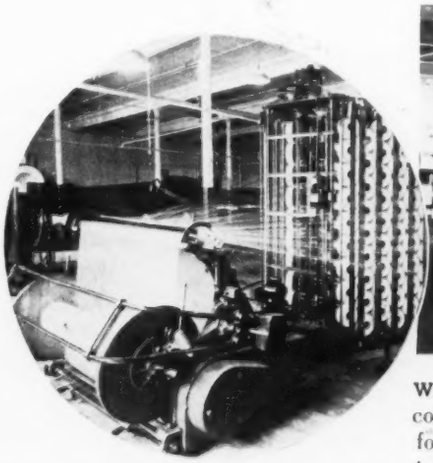
SPECIALIZING IN production of fine combed yarns, Kilburn Mill, New Bedford, Mass., believes in the value of modern equipment. Illustrated at left is part of installation of Universal Winding Co. winders; 1,000 spindles have been installed recently and more machines are to be added soon.



ONE OF THE LATEST PHASES of the modernization work carried out by Lincoln Bleachery & Dye Works, Lonsdale, R. I., is the installation of the recently developed Foxboro Co. pneumatic loading system on a dye padder in order to obtain equalized pressure on both sides of the squeeze rolls and thereby to insure uniform dyeings.



VIEW IN SPINNING ROOM of Packard Mills, Inc., Webster, Mass. Here twelve Davis & Furber Simplex woolen spinning frames have been installed recently for spinning warp yarns used in manufacture of women's wear fabrics in which Packard specializes. The installation has reduced cost of making warps nearly 50%, due to lower spinning costs and the larger bobbins produced.



ORGANIZED IN 1938. Hampshire Woolen Co., Ware, Mass., is one of the newer establishments which are contributing to comeback of New England. The dyeing and finishing departments, which are up-to-date throughout, are equipped with Riggs & Lombard Fleet Line dye kettles, crusher, tentering and carbonizing unit, fulling mills (shown below), washers and dryers.

WAMSUTTA MILLS, New Bedford, Mass., is one of the better-known cotton mills of New England, having gained a nation-wide reputation for the high quality of its percale sheets and other fine goods. Modernization work carried out recently by Wamsutta includes the installation of Barber-Colman 270-spindle spooler and high-speed warper.

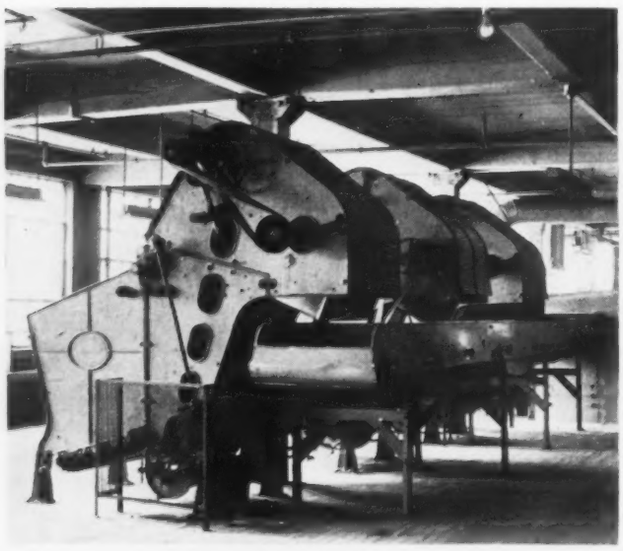
THE NEW YARN MILL built by Powdrell & Alexander, Inc., Danielson, Conn., for producing specialty yarns used in making clip spots for the company's curtain fabrics is equipped with the most modern types of Saco-Lowell opening, picking, carding, roving, drawing, and spinning machines. Illustrated is a section of the card room which contains eighteen 40-in. cards, with 12x36-in. coilers and continuous strippers.

Medford Streamlines Scouring Plant

THE DECISION last year, by A. L. Rohmer and his associates in the then Rohmer Wool Scouring Co., Newton, Mass., to bring completely up to date their wool-scouring set-up, carried with it also the decision that to obtain maximum benefit from new machinery, it should be housed in a plant well adapted to the particular equipment. Erection of an entirely new structure appeared unnecessary, since investigation disclosed existence at Medford, Mass., of a building constructed a few years previously, which appeared admirably suited. This plant, having a long and relatively narrow floor plan, was ideal for straight-line installation of the long scouring trains.

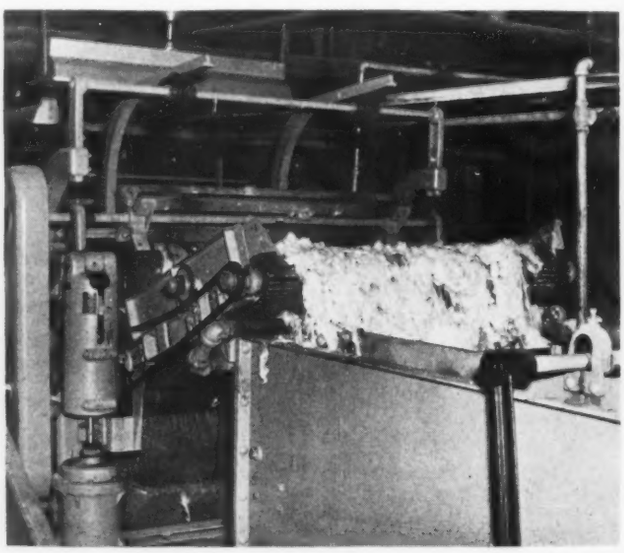
Arrangements were therefore made, and installation of machinery begun. Two lines of scouring equipment are now in use, a third is in process of installation, and a fourth is contemplated.

The new mill is known as Medford Wool Scouring Co., and its executive personnel includes A. L. Rohmer, president; his brother, Frank X. Rohmer, superintendent; and Frank C. and Edward F. Rohmer, sons of the two first named, assistant superintendents.



WHEN WOOL ARRIVES at the mill, by truck or by rail, the bags are unloaded to a conveyor which carries them up to the third and fourth floors where they are weighed, sorted, and stored. From this point the stock is dropped to the second floor, on which are installed two lines of an ingenious set-up for mixing stock blends. Each of these consists of three automatic feeders which deliver to a conveyor apron. If, for instance, a mix of three different stocks is to be made, each is dropped from the storage rooms in front of a different feeder. The feeders are operated at varying rates, so adjusted that the correct percentage of each wool falls on to the conveyor. The conveyor, in turn, delivers the blend thus "laid down" to a duster, from which it goes to a mixing picker. After picking, the wool is again dropped, this time to the first floor and into the automatic feeders which supply the scouring machines.

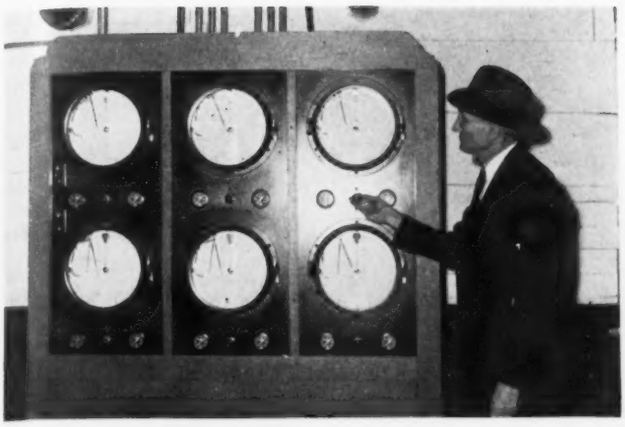
★ ★ ★ In woolen and worsted, as well as in other textile branches, New England manufacturers are finding proper equipment layout and modern machinery a winning combination. Described and pictured here is Medford Wool Scouring Co.'s new mill, in the planning of which both these factors were carefully considered. ★ ★ ★



IN THE SCOURING ROOM, full advantage has been taken of the long, narrow floor plan of the building. Each scouring train, consisting of a feeder, six bowls, and a dryer, is laid out in a straight line. Thus all wool to be scoured enters the room at one end, and all scoured and dried stock leaves at the far end.

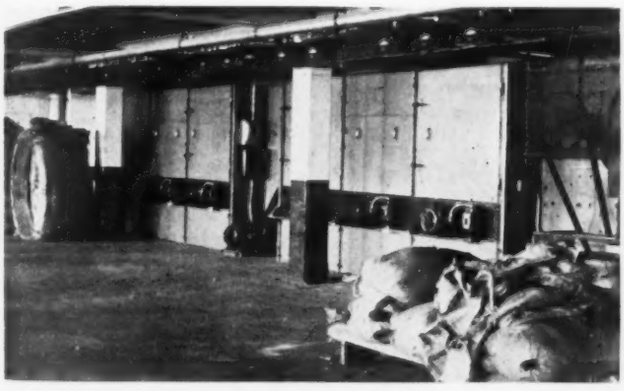
Each bowl of the scouring machines, which were supplied by James Hunter Machine Co., is driven by an individual G.E. motor. In operation, the first bowl contains only cold water. Bowls 2 and 3 contain alkali and soda ash. The fourth bowl contains a small amount of soap, if it is desired to brighten up the stock; otherwise it contains only warm water. The fifth bowl is a cold-water rinse; and the sixth is filled either with water or with bleaching chemicals. This last bowl, incidentally, is lead lined throughout.

There are several interesting features incorporated in the installation. One of these is the special sewers which have been built to speed up dumping of the bowls when changing over for new scouring. Large sloping troughs, cut into the floor and running the full length of the bowls, empty at their lower ends into the regular sewer system. The troughs are 4 ft. wide, and vary from 3 to 10 ft. in depth. With these, and the help of a few valves, even the largest bowls can be dumped in 2 minutes.

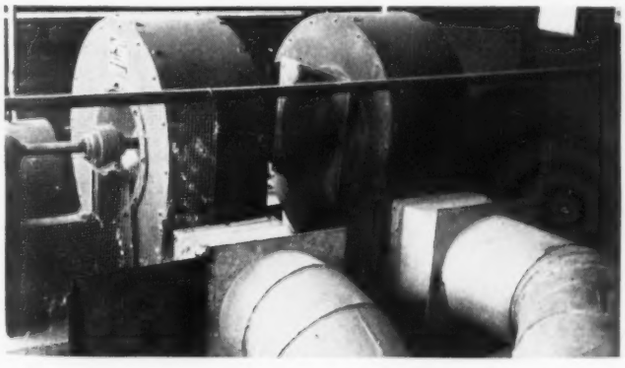


CORRECT TEMPERATURE is automatically maintained in every bowl by means of Foxboro controllers. Pressure of squeeze rolls is equalized by use of hydraulic controls; on the two lines to be added, a newer development in squeeze roll control—pneumatic loading—will be incorporated.

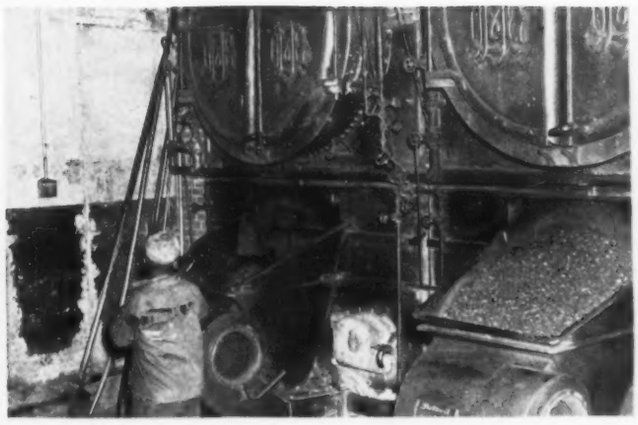
Means are available for instrument determination of alkalinity of scouring liquors, and for recovery of wool grease from used liquor. Equipment for both purposes was supplied by American Chemical Paint Co.



DRYERS, also supplied by James Hunter, are of six-section type. The first three sections have Foxboro automatic temperature controls; the last three have, in addition, automatic humidity controls, so that all stock leaves the dryer with correct moisture percentage. The dryers have drum-type, rather than lattice, feeds.



HANDLING OF THE STOCK when it leaves the dryer is completely eliminated by means of two Buffalo Forge blowers, and pipe lines through which the clean wool is again carried upstairs to stock rooms, where it is re-bagged and stored while awaiting shipment.



MEDFORD GENERATES ITS STEAM in these two Dillon 60-in. horizontal return tubular boilers fired by Detroit stokers. The mill burns a combination of anthracite screenings and bituminous coal; this is said to have cut fuel costs 30%. Power is purchased. A bus-bar distribution system supplied by Bulldog Electric Products Co. runs the entire length of the mill—210 ft.—along the first floor ceiling. It has power inputs at one end and the middle, thus obviating voltage drops, and is so arranged that connections can be made at any point along the line for operation of machines on either first or second floor. This system, which was planned and installed by Wm. H. J. Cooper Co., cuts almost to the point of non-existence runs of wire from power source to motor.

Fluorescent lighting, supplied by Metallic Arts Co., is installed throughout the plant, and the value of the lighting is being further enhanced by white painting of all interior walls and ceilings.

WATER, a most important factor to a plant of this type, is obtained from both the city system and from the company's own artesian well. Large hot and cold water storage tanks further safeguard the company's supply, and help to assure an adequate quantity at all times. The mill's well consists of an 8-in. casing sunk 500 ft. through solid rock. Operated by a Pomona vertical centrifugal pump equipped with a 12-hp. motor, it delivers approximately 42 gal. per min. at a cost about one-fourth that of city water. This is sufficient water for the two scouring trains now in place; another well may be sunk to take care of the lines to be added.

Pontiac Installs New Type of Range Drive

BY JAMES G. CRAIG, *Fruit-of-the-Loom, Inc.*

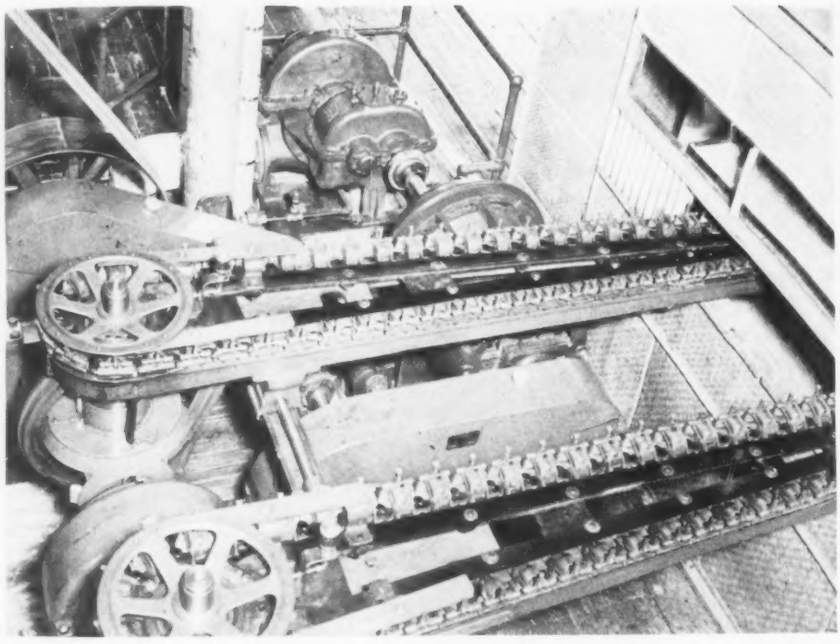
INCREASED DEMAND upon our company for a certain line of print cloth sprang up about two years ago. For the proper handling of this line, we were obliged to use several of our processing machines in a number of individual steps. While the result obtained was satisfactory, the complications of routing, follow-up, and cost were such that we realized a combination of the processes must be made and a complete processing range set up.

For more than 10 years, we had had experience in our Pontiac (R. I.) Finishing Plant in designing and operating range drives for finishing and intermediate processes. All these ranges had used d.c. motors. Speed and tension control of individual units had been secured by a multiplicity of dancer-roll compensators actuating rheostats. All our ranges had operated satisfactorily.

It would have been natural for us in working out the new range unit to have duplicated arrangements previously used on our other ranges. The problem, however, was complicated by a somewhat different set of conditions. Before discussing these, let us consider the operations we wanted to combine.

We required a processing unit that would be able to either: (1) dry to width, or (2) dry and finish to width. To dry to width called for a set-up of a stack of pre-drying cans, a tenter with necessary drying house, and a batcher. To dry and finish to width called for a set-up of a stack of pre-drying cans, a finishing mangle or equivalent an intermediate set of pre-drying cans, a tenter with necessary house, a calender, and a batcher.

These are ordinary and normal range requirements. In addition to them, it was further required that we be able to break up the complete range into two separate range units for simultaneous independent operation. These units were to function as follows: (1) can dry and batch cloth, and (2) finish to width. To can dry and batch cloth called for a set-up of the same stack of pre-drying cans previously mentioned, delivering to an intermediate batcher not previously mentioned. To finish to width called for a set-up of the finishing mangle or equivalent, the second-mentioned set of pre-drying cans, tenter with necessary drying house, calender, and batcher, all previously mentioned.



Turbine-generator unit (in background) is coupled to tenter frame

With a satisfactory source of direct current, it would have been possible to accomplish these operations in much the same manner used on our existing finishing ranges. One of the complicating conditions was that we did not have a sufficient direct-current supply.

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The many developments which have taken place in recent years in cotton finishing have called for installation by finishing companies of various types of special-purpose equipment. In numerous instances this equipment consists of some form of continuous-processing range. This article describes a versatile finishing range installed at Pontiac Finishing Plant, with particular reference to a new type of turbine-electric variable-speed drive with which the range is driven

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We had arrived at the stage in the development of our range where we knew what we wanted, but we did not know how to accomplish it. At this point, we learned that General Electric Co. had developed a new type of variable-speed range drive. We promptly asked that company to discuss this drive with us.

It was an interesting morning when the G. E. representative called to discuss our problem. We listed our requirements and then listened to a description of the new G. E. turbine-electric drive. It appeared that it would do everything we asked. With it, we did not require the installation of additional d.c. or a.c. generating equipment. We found that its first cost would be less than any other suitable type of range drive.

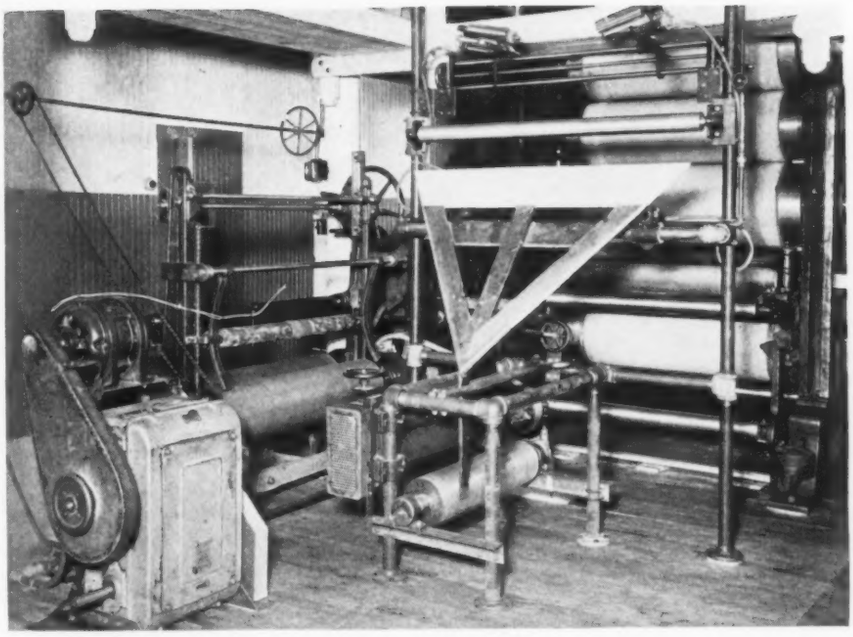
THE DRIVE for our finishing range proposed by the General Electric engineers involved the installation beneath the tenter frame of a compact power unit, consisting of a gear turbine coupled to a synchronous a.c. gen-

erator. A shaft extension from the a.c. generator would provide mechanical drive for a load of about 40 hp., consisting of a tenter frame, calender, and batcher. All other sections were to be individually driven by a.c. induction motors supplied with power from the a.c. generator, which was to be separately excited from a motor-driven exciter. Characteristics of the motors provided for synchronizing the follower sections and distributing load changes with small change in cloth tension. This elimination of compensation gates and rheostat was particularly attractive.

The turbine drive was to be controlled in a manner familiar to our operators. That is, a rheostat was to be used to adjust speeds over an operating range of 20 to 1 if necessary. Basic controlled speed was to be obtained from a pushbutton station for pre-set operating and threading speed, as well as start and stop. Additional safety stop stations were to be installed where desired.

While of no concern to the range operator, these controls were to be wired through an inclosed control panel containing suitable switches and relays, to control the generator and exciter and motivate a speed-control valve. This valve was designed to regulate steam input to the turbine in response to the speed setting as indicated by a pilot generator.

Provision was to be made for cutting out any of the follower sections by opening disconnecting switches and for shutting down the range in case of overload on an individual motor. We could operate this range in two or more sections—one driven by the turbine, and others from the plant a.c. circuit. In this way we would be able to process two grades of cloth simultaneously.



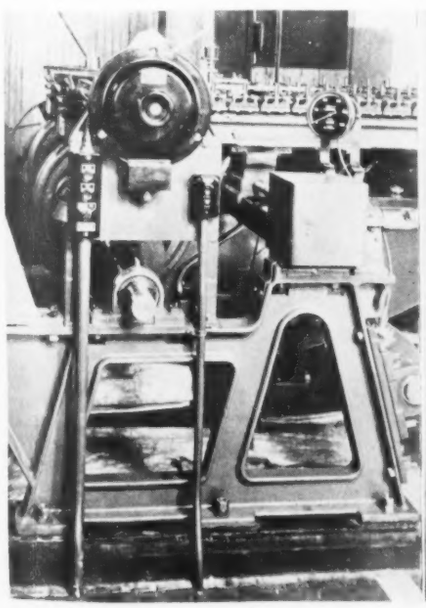
Motor drive on doubler and batcher

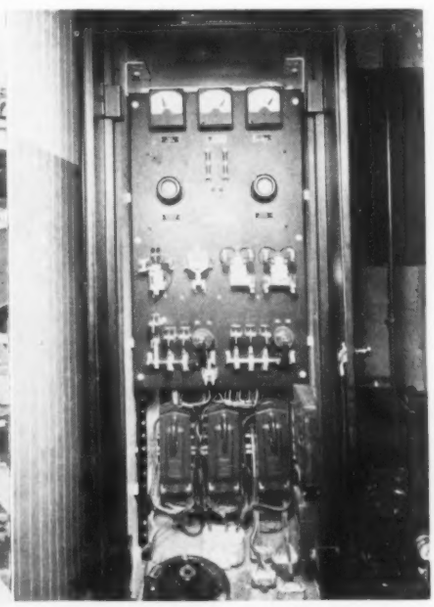
The drive was ordered and installed on the basis of the preceding proposal. Our men made the installation, and found it was an easier range to install than the d.c. drives we have previously used. A few minor adjustments and corrections had to be made in the control mechanism when starting up the range. After taking care of these, we had no further trouble. Today the range will run continuously for 24 hr. except for cloth changes.

In its operation the range is particularly impressive. Acceleration is smooth, and the cloth tension between units is maintained with good uniformity. Dynamic braking is used in stopping, and here a range of adjustment allows the operator to control the suddenness of this operation.

Safety devices have been built into the range unit wherever necessary. Numerous stop stations have been provided, and restarting cannot be accomplished until all the stop stations are cleared.

When ordering the turbine electric drive, we fortunately specified a power output greater than required. This has allowed us to add unplanned units to the range as production conditions require. Recently, by the addition of a doubler and batcher, we were enabled continuously to put up a particular grade of cloth subsequent to finishing.





LEFT, Master control, including speed-control rheostat and pushbutton station, of turbine-electric drive at Pontiac. RIGHT, Generator and exciter control panel of the drive.

OPERATING COST of the range drive unit, due to the use of the exhaust steam in other processing operations, is low. If we had been obliged to purchase the power required for the range drive from the local power company, the difference in operating cost over the turbine electric drive would have paid for the drive in less than a year. Our cost per yard of cloth processed on the unit would have been increased by 0.02c. with purchased power. Another phase of the operating cost is that of maintenance. This is particularly low, since the turbine is totally inclosed and, aside from lubrication, needs only to be inspected once a year. It is also low since the motors are of the induction type and do not require the attention demanded by d.c. or some variable-speed a.c. motors.

Marum Knitting Is Typical New Venture

TWO POPULAR PRODUCTS of Marum Knitting Mills are women's "Devil's socks" (left) and cable-stitch socks for men (right). Mary Martinese (center) operates some of the 55 links-and-links knitting machines installed in the plant

THERE IS ONLY ONE hosiery mill in the whole city of Lawrence, Mass., in spite of the fact that that city is a leader among New England centers of textile production. The lone plant is that of Marum Knitting Mills, Inc., and it is located in one section of the sprawling buildings which 15 years ago housed the cotton spinning and weaving equipment of Everett Mills. The Marum plant began operations three years ago, shortly after the arrival of Julius Stern and Hans Marum in this country from a Europe over which dark storm clouds already were lowering. Thirteen Hilscher links-and-links hosiery knitting machines, which the men had brought with them, became the nucleus of the new enterprise, and were soon put to work producing high-grade fancy hosiery of cotton and wool for both men and women, of a type not before made in the United States.

Fortune smiled on the new mill, and it was soon necessary to augment the original operating crew of two. Since no workers with previous experience in hosiery knitting were available, it became necessary to select and train, from the ground up, men and women who seemed to possess an aptitude for the work. The thirteen original knitting machines also were soon outdistanced by demand for the mill's products, and more were ordered from both English and American sources. The managerial staff had likewise to be augmented, and Messrs. Alfred and Arnold Marum have taken over some of the executive and production duties, respectively.

Today, the Marums operate 55 knitting machines—more than quadruple the number with which they started. The original Hilschers (German machines), and the newer Autoexpresses (English) and Scott & Williams Komet's (American) are lined up side by side, and seem to get along amicably enough. Sixteen loopers of Southern Textile Machinery Co. manufacture handle the product of the knitting machines. The hosiery from the loopers is in turn handled by boarding machines supplied by Paramount Textile Machinery Co., B. F. Sturtevant Co., and Philadelphia Metal Drying Form Co. Equipment is also in place for fancy embroidering and other special work the mill carries on. Fluorescent lighting is installed in many parts of the plant.

Business continues to increase with this new New England mill. Machines are now being operated on three 40-hr. shifts, and enough orders have already been booked to last through November at the current rate of production. High-style hosiery is still the rule, with retail prices for the company's products ranging from 50c. to $3.50 per pr. New and novel constructions are constantly being developed. Of these, a men's cable stitch sock is pictured in one of the accompanying photographs, together with one of the so-called "Devil socks" for women. Devils socks incidentally, were selected by the Duchess of Windsor for her personal use on a recent visit to Miami, and this fact has resulted in a considerable vogue for hosiery of this type.

★ ★ ★

Numerous new enterprises have in recent years come into being in New England, and have contributed considerably to the comeback of that section. Typical of new textile companies established in former cotton mills is Marum Knitting Mills, described in this article.

★ ★ ★

TEXTILE EQUIPMENT NEWS

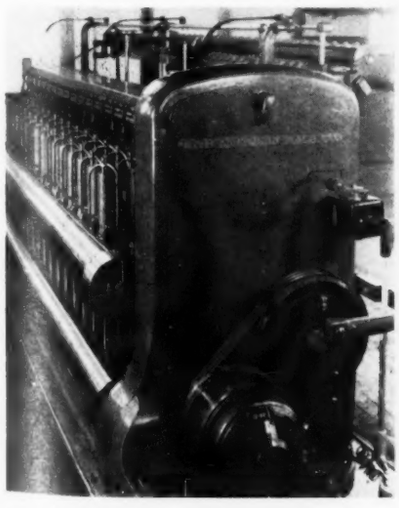
High-Draft Roving Frame

A new high-draft roving frame was exhibited by H & B American Machine Co., Pawtucket, R. I., at the recent Southern Textile Exposition. It is equipped with the H & B five-roll scroll-condenser high-draft system, which makes possible a draft range up to 35 in one operation direct from drawing-frame sliver. Numerous improvements have been incorporated, including a streamlined head-end inclosure, silent-chain drive to the spindle shaft and bobbin-lifting shaft, lowering of the top cone below the roller beam, and new type snug rail with removable snugs and steps.

The company's universal head-draft gearing has been retained. This permits intermediate draft changes without changing the overall draft. The crown gear for overall draft as well as all adjusting yokes have retaining bolts easily accessible for quick changes.

A new weighting system is another feature designed to provide positive control of weight distribution. One weight controls the four back lines of rolls, thereby eliminating binding of multiple weights under the roller beam. The weight hook has a finger grip for releasing weight load on rolls, and the weight lever can be easily slipped out of the stirrup to facilitate removal of the saddle. This design of weighting system is said also to give maximum cleaning space for the operators.

Metal casing-off plates and metal clearer covers are cited as adding to the appearance of the machine and to facilitate cleaning.

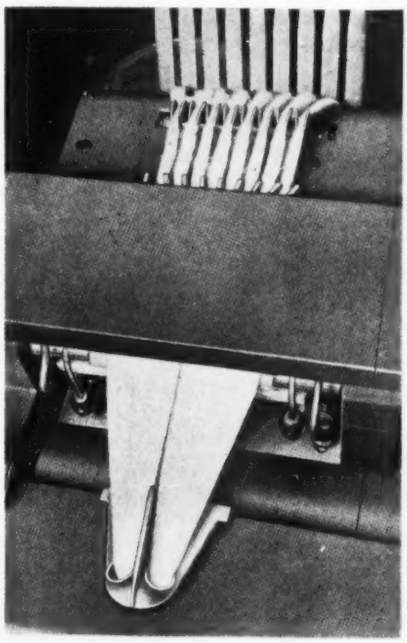


High-draft roving frame (H & B)

Drawing Frame

A recent new product of Whitin Machine Works, Whitinsville, Mass., is a drawing frame, known as Bi-Coil. Advantages claimed include: double the production of conventional drawing; only half the usual number of sliver cans required for drawing and for the first roving process; savings in card-room floor space, and maintenance of quality equivalent to that of conventional frames.

Each delivery of the new frame is fed eight slivers, and the draft used is approximately four, or about $\frac{2}{3}$ that used on conventional drawing.



Close-up of trumpets on Bi-Coil drawing (Whitin)

The product of each delivery is split into two strands of sliver, which are then passed through a double trumpet and into a can. The two ends of sliver are coiled in the can in such a way that they do not twist about each other when the double strand is subsequently drawn from the can.

The eight slivers are fed into a standard 4-roll drafting arrangement; the usual selvage guide which rests on the web between the first and second rolls is provided with a finger in the center which separates the web into two equal parts. After the twin webs emerge from the front roll, each is condensed through a trumpet; a separator plate mounted on the trumpet bracket is said to insure complete separation of the webs. The trumpets are adjusted to act as stop-motion elements and each is free to operate independently of the other.

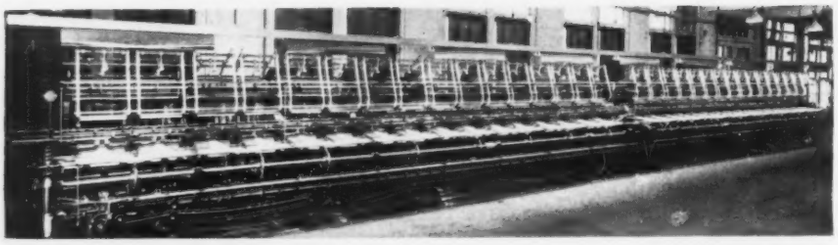
Where two processes of Bi-Coil drawing are installed, the number of sliver cans required in front of the first drawing, behind and in front of the second drawing, and behind the first roving process will be only half of the number required where conventional frames are used.

Color Matching Instrument

Graphic Arts Research Corp., 420 Lexington Ave., New York, is introducing the Comparascope, an instrument designed to facilitate quick comparison of colored samples regardless of texture of the surfaces, or the time and place at which the comparison is made.

The instrument weighs 6 lb., and is portable. For use, it need only be plugged into an electric light circuit. The device consists of a 10-in. diameter hollow aluminum sphere, the interior of which is scientifically coated and illuminated to provide adequate diffused

Comparascope (Graphic Arts Research)



32-section full-fashioned machine (Lieberknecht)

light without shadows, and a 2¼-in. diameter stage mounted horizontally in an opening of like dimension at the lowest point of the sphere's vertical axis. The eyepiece is tubular, monocular, and lensless, and is located near the top of the sphere at a point calculated to give the best viewing angle of the samples to be compared.

Source of illumination is two lamps, the housings of which are fastened on the surface of the sphere and the light of which enters the sphere through small port holes beneath the housings. The illumination is said to be uniform and equal on both samples and effectively to "flatten out" textured surfaces so that different finishes appear the same.

The sphere is mounted upon a 3-legged base for ordinary use but can be dismounted and used for comparisons of such fixed specimens as wall surfaces. Interchangeable sphere caps, one with plain coating and the other with a colored coating, are said to aid comparisons where colored samples, particularly darker tones, are viewed. Several correction and density filters are provided in apertures of the revolving eyepiece.

32-Section Full-Fashioned Hosiery Machine

A 32-section machine for knitting full-fashioned hosiery has been introduced by Karl Lieberknecht, Inc., Reading, Pa. The machine, which is 51 gage, 14½ in. section, is said generally to follow the design of this company's 28-section machine announced a few years ago, and to make possible higher production at reduced knitting cost.

The new 32-section machines really consist of two 16-section machines, with a common center drive. All shafts, with the exception of the drive and counter shafts, are split in the middle. The carrier rack is located in the center between the two 16-section halves; while a narrowing rack, mounted on the narrowing machine itself, is positioned in the center of each 16-section half. In this manner all the advantages of rigidity and freedom from temperature variations, found in smaller-section machines, are retained in this longer machine, it is stated.

The automatic welt turner is brought into and out of operation by a small auxiliary motor, as is the narrowing machine by a second small motor. Loop regulation is automatic, while control of frictions and carrier-rod stops is semi-automatic. The machines are provided with picot and curved heel as standard equipment, and can also be provided with modified or full lace. Models are available to produce legs, or some form of leg-foot blanks, or both if desired.

Automatic Filling Winder

Abbott Machine Co., Wilton, N. H., has developed a new automatic traveling-spindle filling winder which is designed to require minimum upkeep and attention. Construction has followed the design of the traveling-spindle cone and tube winders made by the same company, with the exception that each spindle is driven by an individual motor.

The 55-volt, 3-phase motors turn the spindles at 3,600 r.p.m. when operated on 60-cycle current; higher or lower speeds are obtainable by using a cycle changer which not only permits a wide range of speeds but also adjusts the incoming current to 55 volts. Electrical tracks run around the inside of the main rail in a well-protected position; each spindle motor picks up current from the tracks through brushes which can be raised and lowered from the tracks, forming a switch to start and stop the motor at various points around the frame.

The use of only one automatic head is said to make the winder's construction and operation extremely simple; bobbins can be dumped into a large hopper from which they automatically are fed to the head without further attention. The operator's duties consist of tying-in supply packages and piecing up broken ends, it is stated.

Chain speed can be regulated within wide limits so that a bobbin will be filled during one trip around the winder; changing the chain speed involves changing a small V-belt pulley.

For mills which do not desire an automatic winder, or find it unsuited to their problem, the same manufacturer has introduced a loom bobbin winder whose operation is patterned much after that of a spinning frame, and which is said to wind 25 to 50% more yarn on bobbins than is wound on spinning frames and to permit removal of slubs, gouts, etc., in a preliminary winding operation.

The winder consists of a cone or cheese creel and 48 spindles set on

Automatic filling winder (Abbott)

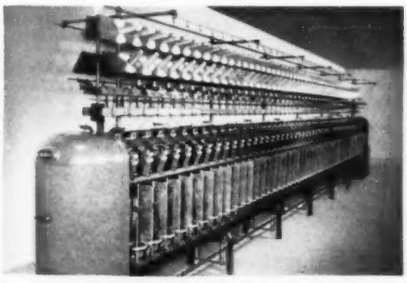
WHAT DOES "5B" MEAN TO YOU?

"5B'd" silk, rayon or combination yarn is yarn that is doubled and twisted on one machine, the "5B".

The first machine designed and built for this purpose was an Atwood machine, identified by the shop symbol "5B". The Atwood "5B" has always been the one best machine for the job. It offers a superb example of engineering advancement, for today's Atwood "5B", Model 10, is as different from its ancestor as a "V-12" from a "Model T".

You are seriously handicapped in meeting present quality, quantity and cost demands without this latest model Atwood "5B".

For the whole story about the Atwood "5B", Model 10, and its equally modern running mate, the Atwood Twister, Model 110, get in touch with our nearest office.



THE ATWOOD "5B", Model 10

A precision machine that combines uniformly dependable quality production with extreme versatility; creel adapted for cone, straight package or bobbin delivery; tensions, drop wires, feed rolls, centering eyes and spindles arranged for maximum operating ease and efficiency; improved ring rail and centering eye construction for a smooth, uniform balloon and precision built packages; improved instantaneous stop motion; spiral bevel gear twist unit mounted on anti-friction bearings; three point, ball bearing motor mounting with built-in tension control; rings up to 4¾", traverse up to 8½"; twist range 1.4 to 84 turns, either hand.

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SALES OFFICES: WILKES-BARRE • STONINGTON • CHARLOTTE • LOS ANGELES • MANCHESTER, ENGLAND
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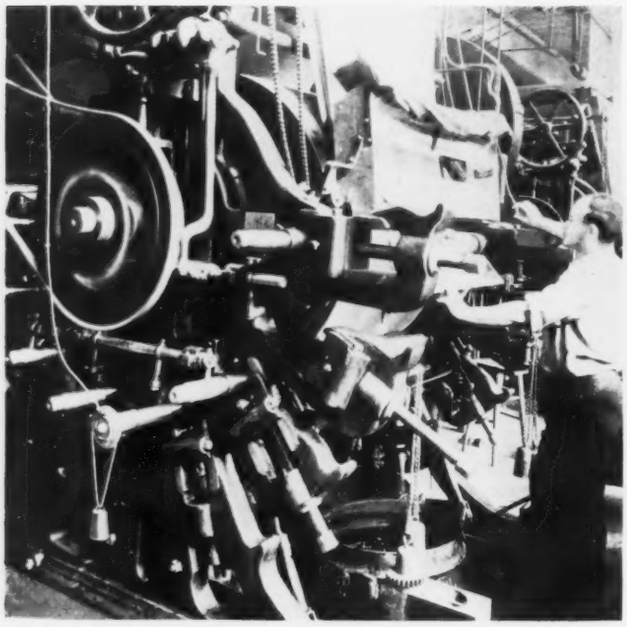
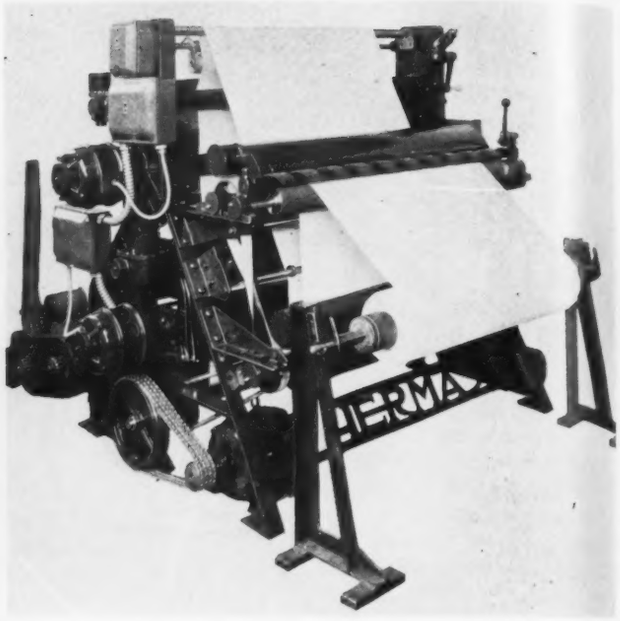


Stroboscopic inspection for high-speed printing (General Electric)



Automatic shear (Hermas)

2½-in. centers in one line; spindle speed is 4,200 r.p.m. When a set of bobbins is full, the winder is automatically stopped and the traverse bar returned to starting position. Doffing is the same as on spinning frames.

Overhead fans are provided to keep supply packages free from fly, a detector is provided on each end to stop winding if a break occurs, and magazine creels are available.

Stroboscopic Inspection System for Printing

For application to high-speed printing machines, General Electric Co., Schenectady, N. Y., has brought out a stroboscopic inspection system designed to permit printing machine operators to make checks for register and for streaks or other imperfections while the machine is running at any speed up to 475 yd. per min. Two standard-length 40-watt fluorescent lamps, mounted in reflectors and set a short distance apart so that there is viewing space between, provide the synchronized flash illumination; the double lamp and reflector unit is mounted on the front of the printing machine at a height convenient for the operator to see between the reflectors.

A synchronizing cam mechanism works from the end of a printing roll and acts somewhat like the distributor in an automobile, synchronizing the timing of the flash to the movement of the machine. The mechanism consists of a cam which revolves with the mandrel, and a stationary, non-revolving part which acts as a contact as the cam revolves. In order to time the flashes in accordance with the number of pattern repeats around the printing roll, 23 cams, each with a different number of points, are provided with the system.

The synchronized impulses from the cam mechanism are passed along to the main control unit located above the machine. The main unit, containing a transformer, condensers, and thyratron and ignitron tubes, provides the energy for the short flashes. A pendent pushbutton from the main control unit enables the operator to turn the system on and off.

Vertical-Knife Shear

A recent announcement of Hermas Machine Co., Hawthorne, N. J., is of a new four-knife automatic shear, called the Type AV. The four knives, two on the back and two on the face of the cloth, are mounted vertically, so that the cloth enters at the top and passes each knife on the way down. This arrangement is said to permit a saving on floor space.

Each revolving knife is driven by an individual electric motor, and motors are controlled to allow seams to pass without damage, it is stated. A single micrometer adjustment is provided for all four cloth rests, and is designed to make gages unnecessary and to allow any desired readjustment in less than 10 sec. In conjunction with the adjustment mechanism, a lever is provided for clearing all four cloth rests at the same time, to permit the operator to thread goods through the machine. A new oil spray lubrication system for the knives eliminates leather oiling pads. Knives and ledger blades are made in units, one knife and one ledger blade to a unit, and are designed to be easily removable.

Spindle Oiling Machine

A recent development of Wicaco Machine Corp., Stenton Ave. & Louden St., Philadelphia, is a spindle oiling machine designed to perform a clean job with no waste in maintaining proper oil level in ring spinning and twister spindle bolsters and to effect a 50% reduction in costs. Removal of old oil and replacement with new oil is accomplished in one operation.

A sheet-steel tank with two pumps is so mounted on wheels as to be easily transportable along the lengths of frames. A single electric motor drives both pumps—one a pressure pump, and the other a suction pump. The gun is so designed that the pressure tube, within the suction tube, extends to the bottom of the spindle bolster; the suction tube extends to the correct oil level. When the gun grip is squeezed, the pressure tube discharges oil under pressure in the bottom of the bolster; the oil rises until it reaches the level of the suction tube and the excess is carried back into the storage tank.

The return line from the gun passes the oil through a specially designed rotary-plate filter which can be cleaned without opening, and through a permanent-magnet filter which removes all ferrous particles. The tank is supplied

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... and, it's everybody's job—more man hours, more equipment, more supplies are needed in almost every industry today.

Fortunately, Sonoco was ready when the dam burst. There is no shortage of paper carriers in spite of the demands of the speeded-up production in textiles.

And, today we are carefully planning a reserve production capacity safely ahead of current demand. Only in this way can we hope to meet future requirements and at the same time continue to improve our standards of quality.

We have a job to do and are doing it.

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SERVES THE WORLD
PAPER CARRIERS

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

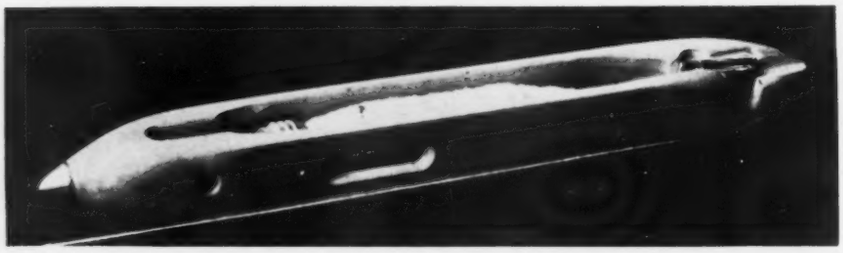
DEPENDABLE SOURCE OF SUPPLY

with an oil-level indicator; an explosion-proof motor is used; the unit is fitted with acid-, oil-, and water-proof tubing and specially covered wire cable.

Five sizes are available, in 25, 35, 60, 500, and 1,000 cu. ft. per min. capacities.

Shuttles for Automatic Looms

As a part of a mill program to eliminate jerk-ins, smuts, and rolled filling, two employees of Chatham Mfg. Co., Elkin, N. C., W. E. Burcham and G. R. Hall, have developed an automatic-loom shuttle designed to eradicate these faults. It was found that the faults which were to be eliminated were caused largely by filling yarn falling below the groove in the side of the shuttle so that it was held between the shuttle and the binder. Consequently, a change in shuttle construction was made, placing the groove at the bottom of the front side where the yarn could lie free near the bottom of the box, and the eye socket of the shuttle was changed to deliver the yarn to this point.



Automatic-loom shuttle (Chatham)

It is reported that after a thorough test the new shuttles have given excellent results in lower burling costs and fewer seconds. Lowell Shuttle Co., Shambow Shuttle Div. of American Paper Tube Co., Southern Shuttles Div. of Steel Heddle Mfg. Co., and Watson-Williams Mfg. Co., have been licensed to manufacture the new shuttle.

Useful Accessories for Textile Mills

A line of enamels for use with the bobbin-tip painting machine described in the January issue of TEXTILE WORLD has been announced by Sherwin-Williams Co., 101 Prospect Ave., N. W., Cleveland. Sixteen colors are available, and one pint of enamel is said to be sufficient for tipping 12,000 bobbins.

Testing fire extinguishers, engines, hoses, and sprinkler systems is the purpose of an approved hydrostatic test pump designed by American-La-France Foamite Corp., Elmira, N. Y. The device is said to make easy determination of maximum safe life of fire-fighting equipment.

A secondary controller, motor operated, for use with polyphase wound-rotor motors on fan, pump, and similar drives is a recent new product of Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa. It provides either 13 or 20 balanced points of control, and can be supplied for 115 or 230 volts, d.c.; and 110, 220, or 440 volts, a.c.

New carton-stitching equipment featuring pedal control said to reduce manual effort 50%, maintenance of movable parts at a minimum, flexibility of application, and low cost, is being marketed by Acme Steel Co., 2840 Archer Ave., Chicago.

Boxes, cans, barrels, and trucks made of vulcanized fiber material have been redesigned by Continental-Diamond Fibre Co., Newark, Del., to accomplish greater standardization and lengthen service life; a feature is the heavy, rust resisting plating given to all metal parts.

Instruments for testing fluorescent lighting fixtures and accessories have been made available by Dayton Acme Co., Cincinnati, Ohio; line voltage, lamp operating voltage, and condition of reactor, compensator, and starters can be easily ascertained.

Vibration service lamps designed to overcome vibration, jar, and shock have been announced by Wabash Appliance Co., 335 Carroll St., Brooklyn, N. Y., in 100, 150, and 200 watt sizes, for five voltages from 110 to 130, and four voltages from 220 to 250 volts.

Rotary pressure joints in larger sizes, known as Type R, are now available with renewable wearing plates, it has been announced by Johnson Corp., Three Rivers, Mich. End plates are made as separate castings and can be refaced; all other metal parts subject to wear are made separate and renewable and can be furnished of bronze to provide the equivalent of all-bronze construction. Type R is offered in 3-, 4-, 5-, and 6-in. sizes; all joints are rated for 150 lb. maximum pressure.

A tramrail carrier with raise-lower cab has been developed by Cleveland Tramrail Div. of Cleveland Crane and Engineering Co., Wickliffe, Ohio. It is available in two general forms: one provides for raising and lowering of cab and load together, the other provides for cab and load raising and lowering independently of each other. Load hoist, cab hoist, and carrier are all motorized and controlled from the cab.

Koroseal paint, named Koroplate, developed for use in protecting metal surfaces against chemical reactions, and recommended for service where extremely corrosive conditions disqualify other kinds of paint or coatings, is announced by B. F. Goodrich Co., Akron, Ohio. It is said to be extremely resistant to the action of fumes and vapors from acids, alkalies, and salts at room temperatures or slightly above.

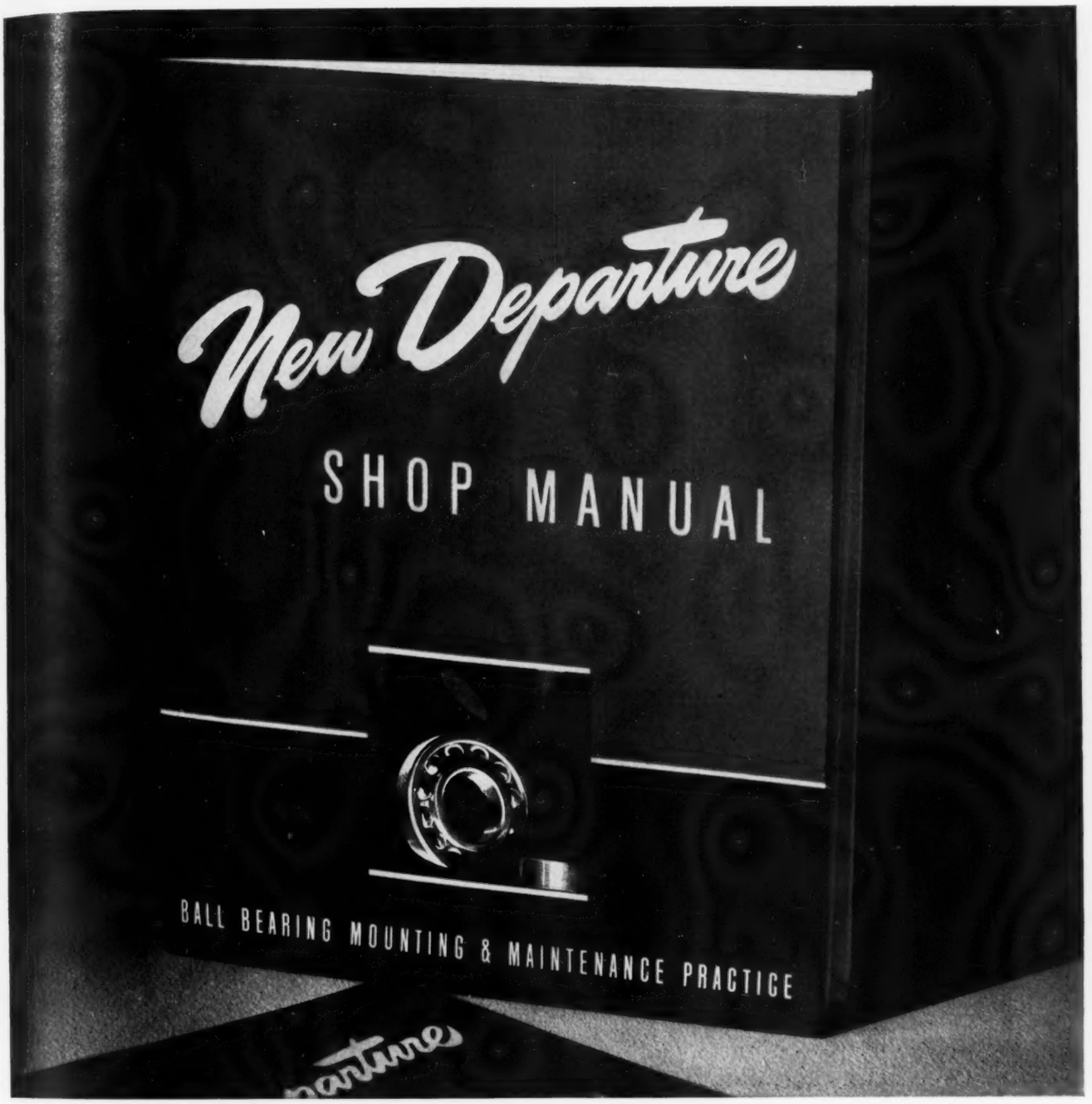
New Dyes and Chemicals

Mothproofing Compound

Development of a new mothproofing compound has been announced recently by Larvex Division, Zonite Products Corp., 370 Lexington Ave., New York. This material, which is known as Wash-Fast Larvex, is applied to wool goods during the dyeing operation. It is stated that extensive tests on wool yarn, blankets, etc., have shown that the mothproofing effect is retained after as many as ten commercial launderings. Wash-Fast Larvex is said also to withstand exposure to dry-cleaning and sunlight. The new compound is highly soluble and can be dissolved readily. It is stated that it has no deleterious effect on either the dye or the material.

Wool Dyeing Assistant

Development of a new compound for use in dyeing of wool has been announced recently by Hart Products Corp., 1440 Broadway, New York. This material, known as Supratol VF, is a highly sulphated oil designed to assist penetration of the dye, promote level dyeing, and protect the wool fibers during dyeing and subsequent processing and in use. The new compound is said



Still At Your Service . . .

While New Departure's vast productive facilities are giving defense projects right of way, New Departure's technical staff has not forgotten its duty to its regular customers.

In fact, both old and new users of New Departure Ball Bearings will find extremely helpful this latest addition to the New Departure Engineering Library—the Shop Manual.

The New Departure Shop Manual should be read by every man responsible for the correct installation of ball bearings for maximum service and long life. Send for your copy and tell us how many additional copies would be required to supply your interested personnel. New Departure, Bristol, Connecticut.

NEW DEPARTURE BALL BEARINGS

3010

to differ from ordinary sulphated products in that it is able to form a stable compound with the basic groups of wool. For this reason, the wool fibers are covered with a thin film of oil which is bound chemically to the wool and which is not removed by rinsing. Supratol VF is applied in an acid bath at a temperature of about 140 to 160° F. The new material is slightly hygroscopic and can noticeably delay loss of moisture. Therefore, wool which has been treated with the compound will, when dried at high temperatures, retain the last traces of moisture for a longer time than will untreated wool.

Calco Vat Color

Calco Chemical Division, American Cyanamid Co., announces the following new product. Calcoloid Blue BLD Double Powder, a colloidized vat color which produces shades of excellent fastness to light, washing, and laundering; an outstanding property of the dye is its rapid and complete dispersion in dye-baths, making it suitable for application by the pigment method.

Du Pont Dyes

E. I. Du Pont de Nemours & Co. announces the following new products. Polyform Bordeaux RF, a formaldehyde-aftertreated direct color yielding a deep bluish red of excellent fastness to washing and perspiration; it is of special interest for discharge work on viscose rayon and cotton.

Pontamine Black BCN, a direct color which is slightly brighter in shade and which stains acetate rayon somewhat less than Seristan Black B; fastness to light and perspiration is good, fastness to washing is moderate.

Mildew Preventive for Use With Paint

A new chemical which can be incorporated with paint to prevent mildew or mold on painted surfaces has been announced by Carolina Aniline & Extract Co., Charlotte, N. C. This compound, known as Mert ZT, is added to paint in the proportion of 1:8. It is said to be odorless, non-toxic to humans, and to have no effect on the color or working powers of the paint.

General Dyes

General Dyestuff Corp. announces the following new products: Benzoform Orange FGL, a direct color recommended for the dyeing of cotton and rayon; when aftertreated with formaldehyde and acetic acid, Benzoform Orange FGL produces bright shades of orange of comparatively good fastness to washing, water, and perspiration; it is not recommended for discharge work.

New Publications

"Gets 'Em Where They Live"

HOW AMERICA LIVES, by J. C. Furnas and the Staff of the *Ladies' Home Journal*; Henry Holt & Co., New York; $3.00.

It's amazing how much interest there is in the way people live. Not whether they strangle their wives or run away with their chauffeurs, but what they eat and read and what musical instruments they play and where they are going to school and how and why, and how many glasses of jelly they are going to put up this year. This book tells those and a myriad other fascinating facts about 16 representative families in this country. The result is more exciting than any novel we have read for a long time, and more profitable than any work of non-fiction we have read in the same period.

These 16 families were visited and interviewed by the staff writers and editors of the Ladies' Home Journal in order to discuss problems of living that varied from budgets to room decoration, from food to fashions in clothing. The findings have been reported and photographed in the book.

The families range from that of Thomas Wilson, millionaire head of the Wilson Packing Co. of Chicago, to the family of Henry Bracey, negro sharecropper in Mississippi, whose cash income last year totaled $26. The others run all up and down the economic scale between these two extremes.

The implications and usefulness of the findings are enormous. But far more important to this reviewer, at least at the moment, is the excitement of the story itself.

Novel of New England

BRIGHT WAS THEIR DESTINY, John De Meyer, Wilfred Funk, Inc., 386 Fourth Ave., New York, $2.50.

The story of Osgood started back in 1657 when a few pioneers led by John Osgood left the Massachusetts Bay Colony, went west, and settled on the banks of the Connecticut River. The colony mushroomed, the original settlers became rich, the Osgood family prospered most of all. In the middle 1930's it was the Osgoods who owned the box factory, the textile mill, the corset factory, the street car line, the city's two newspapers. It was then that Terse Walker, a South Boston Irishman, and his sister Patricia, came to Osgood.

As editor of the two newspapers, Terse witnessed from a vantage-point the conflict between the polyglot working population and the conservative industrialists. When Patricia married Bill Osgood, last male descendent of the Osgood clan, she encountered the forces of tradition, family, and position. The workers organize; strikes follow; William G. Osgood VI bungles matters thoroughly and then dies, never having comprehended any of the reasons for the decline of his industrial domain. Conditions in Osgood grow progressively worse, until the war in Europe and this country's defense program started another boom.

John De Meyer has written a bitter book, but one with much of the truth in it. However, he has failed to show that in recent years countless New England industrialists have become keenly aware of the factors which led to the decline of that section. He has failed to indicate the steps which these men have taken to revitalize New England industry. He has failed to indicate that, like Bill Osgood, literally hundreds of owners of industrial enterprises in New England are buying new machinery all the time, are hiring new men, are working energetically to bring about the revival of New England.

Early Days of English Wool Manufacture

MANHOLD, by Phyllis Bentley; MacMillan Co., New York; $2.50.

When one takes for granted the textile industry of today with its great mills filled with automatic looms, a book such as Manhold is like a startling dash of cold water. In the story of Manhold lies the history of the early wool manufacturing industry of England. Then the cottage weavers who were furnished with wool and with patterns by the pioneer industrialists spent their lives on kerseys and shalloons, laboring for less than a pittance, while the wool goods business grew and prospered.

Sam Horsfall was probably one of the first of the textile industrialists. He made his fortune through the sweat of the cottagers on one hand, and the high prices his beautiful woolens

"... and the stockings we make are the greatest value on earth since we began knitting with T M W Needles."

brought on the other. Manhold was symbolic of the money and power which were his goals, and which he got by hook and by crook. But a scheming niece of old Sam's ruined his too affable son and wrecked the fortunes of Manhold, destroying forever the market for Horsfall woolens.

This book, which completes a series, is a thrilling, ably-handled story of the West Riding country in the 18th century. In addition it carries the flavor of authentic information of the early days in the textile industry.

The Garment Game

FORELADY, by Ann Harbage; Meador Publishing Co., Boston; $2.50.

Not until this novel is read will those who are only vaguely familiar with the garment industry realize the stigma this section casts upon the whole textile industry. The unspeakable working conditions, the low wages which existed until the National Recovery Act was passed, and the chiseling that has taken place since then are discussed without frills in Forelady.

One is impressed by the repetition of the same conditions over a period of forty years, but in a multitude of establishments. One is overwhelmed by the miles of stitching Helen Harrison did from the day she was 12 years old and took her first job at a garment machine, until she was "too old" to keep or to find employment at 52. Hundreds of thousands of garments she had made; children's dresses; soldiers' helmets; boys' shirts; dresses, dresses, dresses. The book tells how she struggled for advancement, and made good, too, at least for a time she was a "forelady." In any other field of endeavor, with the same effort, she might have retired a moderately wealthy person instead of a pauper.

Forelady is Ann Harbage's first novel. It is written in an amateurish manner but she tells a story, and every person in the textile industry should read it to learn more about their affiliated industry: the garment game.

News of Suppliers

Arnold, Hoffman & Co., with main office in Providence, R. I., have recently acquired the dextrine plant of Corn Products Refining Co. at Edgewater, N. J. The equipment has already been moved to Dighton, Mass., where Arnold, Hoffman & Co. are setting up most modern dextrine manufacturing facilities, increasing their output of gums and dextrines.

Watson-Williams Mfg. Co., Millbury, Mass., has opened a southern office at Greenville, S. C., in Room 810, Woodside Building, in charge of the company's southern representative, E. V. Wilson.

JOHN C. TURNER (left) of Chas. Bond Co., Philadelphia and E. A. SCOTT of Seydel-Woolley Co., Atlanta, snapped at the recent Mobile, Ala., convention of the Cotton Manufacturers Association of Alabama.

American Viscose Corp., New York, received two citations in the annual awards for advertising made by the Art Directors Club. One of these advertisements, featuring a color illustration by Carl Ericson, received a medal award as the year's best color illustration. The second, featuring a photograph by Louise Dahl-Wolfe, received a certificate of distinctive merit for color photography. J. H. Mathes, Inc., handles the advertising for Viscose. Over 275 advertisements were entered in the competition.

Barber-Colman Co., Rockford, Ill., announces that R. E. McCausland, field manager, has retired after 36 years with the company. Mr. McCausland is now living at McAllen, Texas.

National Oil Products Co., Harrison, N. J., has appointed George H. Faux, who has been in charge of the credit department for the last 14 years, to be assistant secretary of the company.

Monsanto Chemical Co., St. Louis, Mo., has elected Robert Rast Cole of Anniston, Ala., as vice-president. Mr. Cole is general manager of Monsanto's Phosphate Division which has plants in Monsanto, Tenn., Anniston, Ala., and Carondelet, Mo., and a fourth plant under construction at Trenton, Mich. Monsanto reports that domestic sales volume rose 40% to $14,442,926 in the first quarter of 1941 in comparison with the first quarter of 1940.

ROBERT R. COLE, newly-elected vice-president of Monsanto Chemical Co.

Allis-Chalmers Mfg. Co. has appointed Lee H. Hill, recently elected vice-president, to head a newly-created Industrial Relations Department. In his new capacity, Mr. Hill, formerly assistant manager of the electrical department, will be in charge of collective bargaining, grievance procedure, employment, wage policies and levels, and all other subjects which bear on management-employee relations. Allis-Chalmers has promoted Carlton B. Smith, district service engineer, to be district superintendent of service and erection with headquarters in Healey Bldg., Atlanta, Ga.

Burkhart-Schier Chemical Co., Chattanooga, Tenn., has named Nelson A. Fisher, formerly overseer of dyeing at Rock River Woolen Mills, Janesville, Wis., to be its technical and sales representative for the Mid-West area. Other technical and sales representatives of the company include C. A. Schier, W. A. Bentel, W. J. Kelly, Jr., Lawrence Newman, George McCarty, J. A. Brittain, T. A. Martin, H. V. Wells and George Rodgers.

Danielson (Conn.) **Mfg. Co.,** textile loom products has acquired the former

GENERAL ELECTRIC CO. Schenectady, N. Y. is sponsoring a series of broadcasts over NBC's Blue Network, featuring selected editorial material from "Business Week" for the purpose of informing the American people of the tremendous efforts being made to produce arms, equipment, ships and supplies needed for National Defense and for aid of Great Britain. Beginning May 15, these Reports of Industry will be broadcast every Thursday evening from 8:30 to 8:45 pm, Eastern daylight-saving time.

"The wise man is he who knows the relative value of things"
Dean Inge

The new READING 30-Section 51-Gauge Full-Fashioned Knitting Machine produces 104 per cent more volume and 156 per cent more value than ordinary 20-section 42-gauge machines . . . . . *And remember: Money invested in modern machinery serves as insurance for your total investment.*

TEXTILE MACHINE WORKS • READING, PA.

Old Peep Toad mill, closed many years, and will expand facilities for manufacturing.

Rhode Island Warp Stop Equipment Co., Pawtucket, R. I., will build a 1-story brick addition to its plant on Pine street. From plans by the Dwight Seabury Co., Pawtucket, a general contract has been awarded to Henry M. Soule Co.

Ideal Machine Co., Bessemer City, N. C., has appointed E. B. Robinson as sales manager. He was for eight years representative in Alabama and Georgia for Gossett Machine Co. of Gastonia.

American Trade Association Executives' award, given annually for outstanding achievement in the trade association field, was awarded recently to American Trucking Associations, Inc., for effectively combatting discriminatory legislation and conducting a national advertising and public-relations program aimed specifically at State trade barriers.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has announced that capacitors applied recently on feeders at Drayton Mills, Spartanburg, S. C., have increased power factor from 0.70 to 0.87; 42 dust-tight capacitors rated at 10 k.v.a. are mounted beneath the floor of the weave room, and are connected to feeders in the weaving section of the mill in 14 separate banks; twelve banks of three units each are connected to feeders carrying 120 ½- and ¾-hp., 55-volt loom motors, and the remaining banks are on feeders carrying 60-hp. loom motors.

Hygrade Sylvania Corp., Salem, Mass., broke ground last month for a new fluorescent lamp plant at Danvers, Mass. General contract for the building has been awarded to the Austin Co., Cleveland, Ohio. It will be 2-stories in height, of brick and steel, and will cost $500,000.

ROBERT L. CLAUSE, elected president of Pittsburgh Plate Glass Co.

Pittsburgh (Pa.) **Plate Glass Co.** has elected Robert L. Clause as president, succeeding H. S. Wherrett, who becomes vice-chairman of the board. Mr. Wherrett has been connected with the company since 1891; Mr. Clause since 1914.

International Nickel Co., New York, has added W. C. Pinkerton, for the last six years assistant technical editor of Chemical Engineering Catalog, to its Monel and Rolled Nickel Advertising Department. He will edit house publications devoted to the process industries.

Cochrane Corp., Philadelphia, Pa., has named Stephen B. Haynes as assistant treasurer. He had previously been associated with Mathieson Alkali Works, and Associated Drygoods Corp.

Armstrong Cork Co., Lancaster, Pa., has expanded the functions of its advertising department to include all promotional activity, and has appointed M. J. Warnock as director of advertising and promotion, and E. Cameron Hawley as his assistant. The former joined Armstrong in 1926 and the latter in 1927. In his new position, Mr. Warnock succeeds John P. Young, who has resigned.

M. J. WARNOCK (left) appointed director of advertising and promotion of Armstrong Cork Co., E. C. HAWLEY (right) named as assistant.

International Business Machines Corp., New York, reports new business in the United States and Canada so far this year as 166% ahead of the corresponding period last year, while first-quarter earnings, after usual charges and reserves, showed a 9.8% increase over the 1940 period. This was reported by President Thomas J. Watson at the annual meeting.

Crane Co., Chicago, at a special meeting on May 5 elected John H. Collier as president to fill the vacancy created by the death of Charles B. Nolte on April 29. Mr. Collier was born in Chicago in 1884, and joined Crane Co. as core maker's helper on leaving Purdue University in 1903. In 38 years he has progressed through a variety of positions giving him an intimate grasp of the company's activities.

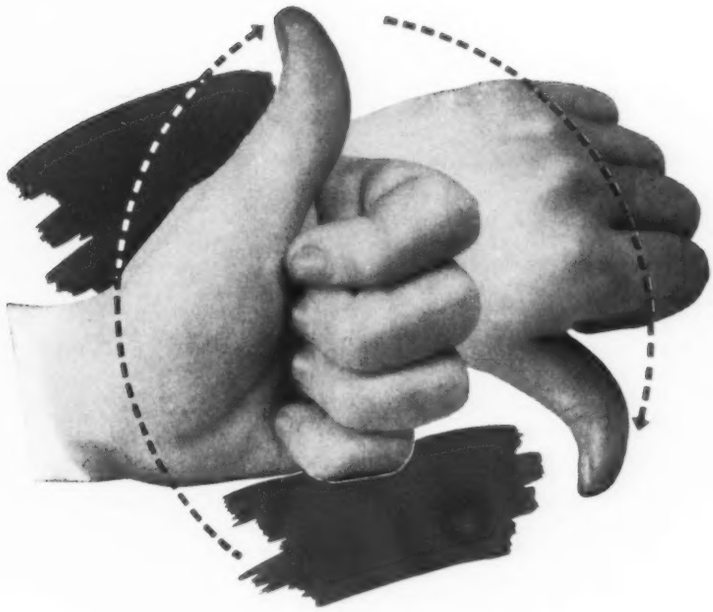
E. I. du Pont de Nemours & Co. will build a new Neoprene synthetic rubber plant at Louisville, Ky. Construction will begin immediately. Capacity of the new plant will be 10,000 long tons a year. Neoprene is now being made in the duPont plant at Deepwater, N. J., at the rate of 6,000 long tons a year, which rate however will be increased to 9,000 tons before the end of this year.

American K.A.T. Corp. has opened a Philadelphia office in Commercial Trust Bldg. under supervision of Frank Campbell Coe, to sell and serve the users of K.A.T. all-colloidal water treatment.

Robert Schey, textile designing, after 31 years at 366 Broadway, New York, has moved his downtown studio to larger quarters at 66 Leonard St. He has also taken additional space for his uptown studio at 1450 Broadway.

Steamaire Co., Cincinnati, Ohio, has appointed Stanley Wertheim as its New York representative. Mr. Wertheim was formerly president of the Monarch Yarn Co., Inc., and is now liquidating that company to devote his entire attention to the Steamaire Co. A temporary office has been opened at 401 Broadway.

American Engineering Co., Philadelphia, manufacturer of Lo-Hed hoists, has made the following appointments of representatives: George C. Lever Co., 50 Church Street, New York, and 972 Broad Street, Newark, N. J., for Northern New Jersey, Greater New York and Long Island; George J. Sturmfelsz, 1208 Southview Road, Baltimore, for Maryland; H. E. Mensch, 424 Book Building, Detroit, Mich., for the Detroit territory.



Necessary "thumbs down" here means "thumbs up" in knitting rooms

Dixie's buyers select the best of Delta long fibre cotton.

Thirty per cent of this cotton is eventually discarded as unfit for Dixie durene.

Close inspection throughout, constant laboratory tests, and checks by all operators, add to the running performance of Dixie durene.

Every time we say "thumbs down," it means "thumbs up" on knitting machines. And the more waste *we* have . . . the less waste *you* have.

Dixie **MERCERIZING CO., Chattanooga, Tenn.**

Dixie Durene . . . . A Product of Controlled Manufacture

➡ Dixie durene's extra strength, double absorbency, so necessary in hosiery, underwear and anklets, means extra wear, extra comfort.

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Textile colors and coated fabrics are two topics discussed in brochure titled "More Than Meets the Eye," which is being offered by Interchemical Corp.

Air filtering in textile mills, windowless factory construction, and other interesting topics are subjects of articles in Vol. 5, No. 1 issue of *Dust Engineering*, published by American Air Filter Co., Inc.

Spools for use in carding, warping and twisting are described in a 4-page folder which includes photographs and construction diagrams; offered by Hubbard Spool Co.

Combination starters and how they make control problems simpler, safer, and more economical, are the subject of a 12-page booklet offered by General Electric Co. under designation GES-2456, and containing many textile-mill photographs.

Labels printed with vat colors and guaranteed fast for the life of the product to which they are attached, are the subject of an illustrated folder distributed by Jackmeyer Label Corp.

Size cooking and storage temperature - control systems are the topics of bulletin No. 54-9 which contains schematic diagrams showing hook-up of the system in textile mills; offered by Brown Instrument Co.

Water treatment for boilers, stills, and evaporators by the organic colloidal principle, is the subject of a recent bulletin published by American K.A.T. Corp.

Dermatitis from wearing apparel, embossing acetate rayon materials, dyeing with madder, and dyeing with indigo are the subjects of four articles in the March issue of *Dyestuffs*, published by National Aniline & Chemical Co., Inc.

Selecting electrical equipment for a variety of services is expedited by the newly revised 64-page "Quick Selector" Catalog No. 30-000 offered by Westinghouse Electric & Mfg. Co.

Plastics in apparel frabrics and gloves made of Vinyon synthetic yarn are the subjects of two articles in the April issue of *Bakelite Review*, published by Bakelite Corp.

Dyeing control systems completely automatic in operation are the subjects of Bulletin IDS27; Bulletin 567 describes experience and benefits to one user of this equipment. Both bulletins are offered by Bristol Co.

25% longer warps with new warp compressor is the lead article in the April issue of *Davis & Furber News*; other articles discuss card grinding, sprayers for raw stock, spinning equipment, etc.; distributed by Davis & Furber Machine Co.

Stainless-steel dyeing machinery is the subject of a color photographic reproduction included with the June issue of *Electromet Review*, published by Electro Metallurgical Co.

Lubrication in textile mills is the topic of a 20-page illustrated booklet containing recommendations for specific lubricants for textile machines, data sheets on characteristics of lubricants, etc.; obtainable from Tide Water Associated Oil Co.

Rayon warp sizing, spun rayon qualities, and a new synthetic fiber are described in the May issue of *Rayon Warp Sizing Specialist*, publication of Charles B. Johnson Machine Works.

Use of sewing machines in the plant of Phoenix Hosiery Co., and problems encountered in manufacturing the second largest tent in the world, are pictured and described in the April issue of *The Needle's Eye*, magazine published by Union Special Machine Co.

Interlock knitting machines, as manufactured by Wildman Mfg. Co., are pictured in a recent folder offered by that company, which also contains an actual sample of sweater fabric produced on this machine.

Range drives for textile equipment, in four types—constant voltage, adjustable voltage, adjustable speed, and turbine-electric—are described and pictured in publication GEA-2750, being distributed by General Electric Co.

Manufacture of acetate rayon, developments in synthetic textiles, and finishing machinery manufactured by Riggs & Lombard, Inc., are covered in articles with full-color illustrations contained in Vol. 3, No. 2 of *Steel Horizons*, published by Allegheny-Ludlum Steel Corp.

Quadrafos (sodium tetraphosphate) is the subject of a 24-page booklet which gives data on properties, uses in general and textile applications in particular; offered by American Cyanamid & Chemical Corp.

Zeolite softeners for providing water of zero hardness at low cost and with minimum supervision is the subject of Bulletin 1901 being distributed by International Filter Co.

Dowmetal, said to be industry's lightest structural metal, is the subject of an 8-page bulletin which includes data on uses, characteristics, production facilities, forms available, methods of working and finishing, comparative properties of Dowmetal and other structural metals, etc.; issued by Dow Chemical Co.

Fabricated Masonite for use in transporting material in process, for conveyor baskets, work-table tops, industrial trays, and other texile uses is the subject of a bulletin recently issued by Service Industries.

Adjustable-speed drives for a.c. circuits, operated all-electrically, are the subjects of Bulletin 307 which, with pictures and brief text, describes how the unit works and what it does; offered by Reliance Electric & Engineering Co.

Fluorescent lamp ballasts are the subject of Bulletin 411-FL which contains detailed information and illustrations of the line of ballasts, from 4- to 100-watt capacities, produced by Jefferson Electric Co.

Sheets and plates of steel are the subjects of Bulletin 107, which contains considerable data on gages, widths available, weights, etc.; offered by Lukens Steel Co.

Liquid-level gages in float, pressure-bulb, pressure, air-bubbler, counterpoise, and differential-pressure types are described for a variety of applications in catalog No. 1015, offered by Bristol Co.

Metallic feeder aprons, made in the United States for all classes of automatic feeds, are the subject of a 4-page illustrated leaflet offered by Sjostrom Machine Co.

Bobbin-tip enamels are the subjects of a color card which contains also data on properties of these products and instructions for their use; offered by Sherwin-Williams Co.

Electric products are the subject of the spring issue of a condensed catalog offered by Square D Co.; included are data on sizes, specifications, prices, etc.

Pumps especially adapted to handling slurries containing solids in suspension are discussed in Bulletin 207-2, which contains both photographs and diagrams; offered by Lawrence Machine & Pump Corp.

Properties of synthetic rubber produced under the name Ameripol by B. F. Goodrich Co. are covered in a recently issued bulletin relating to mechanical rubber goods products.

Combination magnetic starters, including a motor-circuit switch and disconnect and magnetic starter in one cabinet, are described in circular 330, offered by Trumbull Electric Mfg. Co.

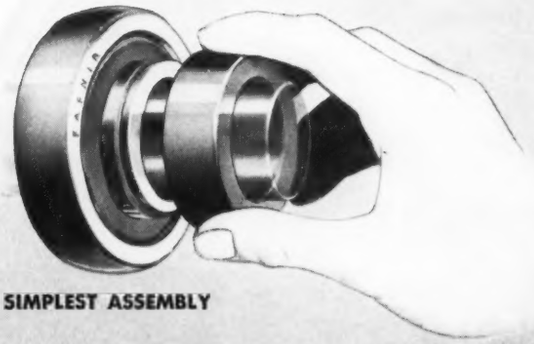
Steam-jet ejectors in single- and two-stage types, for exhausting air and vapors from a variety of types of equipment, are described in Bulletins W-205-B6B and W-205-B8, prepared by Worthington Pump & Machinery Corp.

Capacitor motors in single-phase types with ratings up to 20 hp. are described in illustrated folder BCA 120, offered by Century Electric Co.

How big is a Dust Particle?

DUST-PROOF

COMPACT



SIMPLEST ASSEMBLY

The answer – small enough to work through all but the best of bearing seals, and still large enough to cause destructive wear in a bearing.

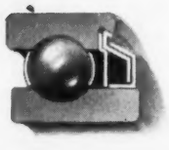
But no dust particle gets by the labyrinth plate shields and steel plate slinger of the new Fafnir Mechani-Seal Ball Bearing. Tests up to 8,000 hours in a "Torture Chamber" filled with whirling cement dust offer conclusive proof.

The new "streamlined" Fafnir Transmission Units incorporating the Mechani-Seal bearing – of which the LAK Pillow Block is typical – provide 100% effective mechanical sealing with no rubbing members. And the bevelled outer ring of the bearing (with non-obstructing grease hole) compensates for any slight misalignment should it occur. Combining the ease of installation of the Fafnir Wide Inner Ring Ball Bearing and Self-Locking Collar, added compactness and super dust-protection, the Fafnir Pillow Block is the leader of America's most convenient, dependable transmission unit line. The Fafnir Bearing Company, New Britain, Connecticut.

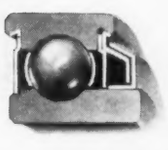
LCJ FLANGE CARTRIDGE Bolts to a frame or housing

LC CYLINDRICAL CARTRIDGE Press-fitted into a machined bore

L TYPE Single Seal



LD TYPE Seal and Shield

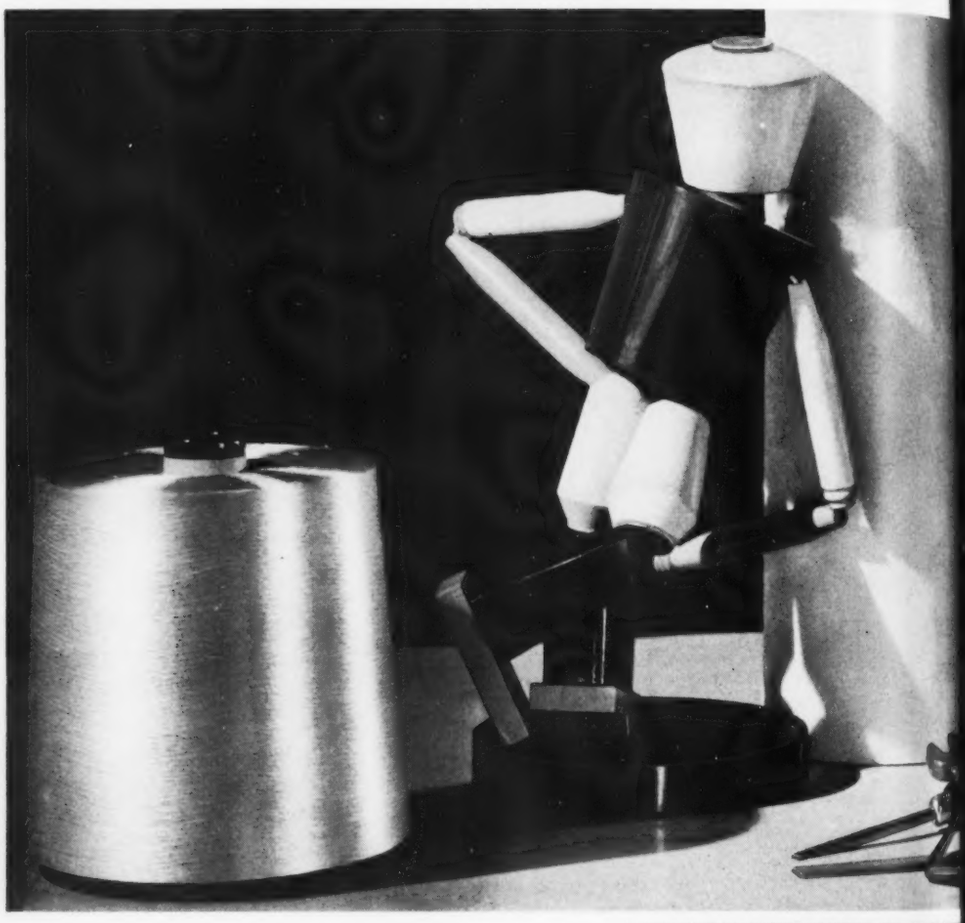


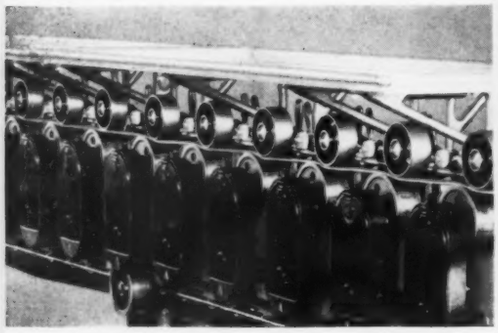
FAFNIR
Ball Bearings

THE BALANCED LINE
MOST COMPLETE IN AMERICA

ADJUSTMENTS MAINTAINED...
FEWER REPAIRS on No. 50 Precision Winder

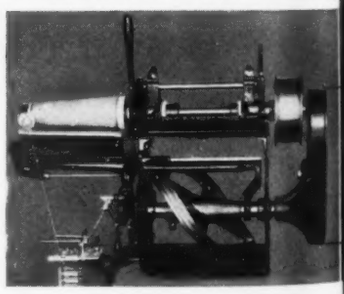
Like all precision-built machinery, No. 50 Winders deserve regular overhauling — which means cleaning and inspecting, replacing worn parts, lining and leveling, and providing fresh oil in the reservoirs. Mills which overhaul their machines — as frequently as conditions require — find that they will hold their adjustments and produce the quality of work they would expect from new machines.

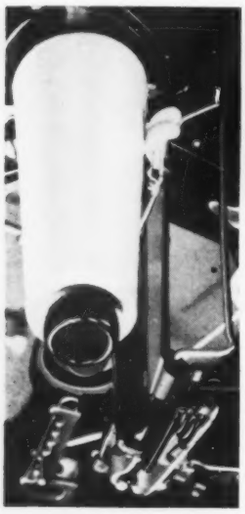


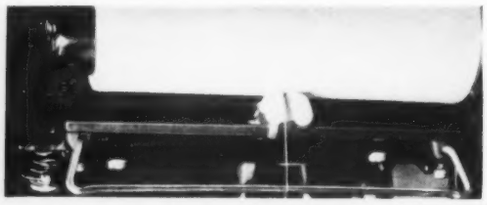


Single belt for 12 spindles means longer belt life, fewer belt repairs, and less wear on spindle bearings. Automatic take-up provides uniform belt tension and keeps spindle speed uniform on all machines.

Spindle bushings are automatically lubricated through a wicking that carries oil from the reservoir. Idler pulleys also have Oilite bushings and a reserve supply of oil that needs attention only once a year.

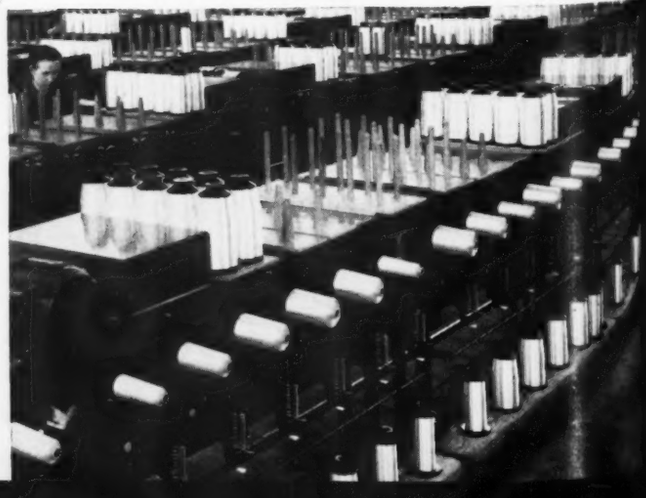






Traverse Frame Backs are cut to conform with cone taper and pivoted from a point directly below the winding spindle. Thread Guides are designed for accurate delivery of yarn at any package diameter.

The largest and most of the other rayon manufactur use No. 50 Winders exclusively . . . which indicates t the No. 50 machine must be best fitted for their ma winding requirements.



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UNIVERSAL WINDING COMPANY

Providence, Rhode Island

THE OVERSEERS' CORNER

PAYROLL DEDUCTIONS AND CREDIT

A PETE & BILL DISCUSSION

Pete, usually bright and cheery, was staring moodily at the ceiling when Bill walked into his office.

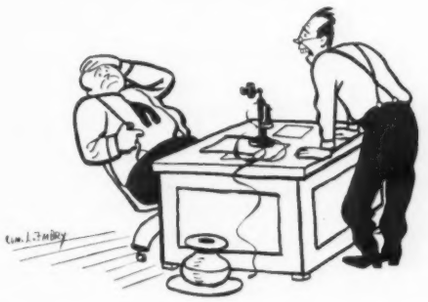
"Day dreaming, or building castles in what is left of Spain?" asked Bill with a chuckle.

"No, just worrying," replied Pete. "I just 'loaned' $5 to a fellow who will never pay me back unless I take it out of his wages, and I do not believe in such deductions. The trouble with him now is he's in over his head."

"Deductions!" exclaimed Bill. "Why if it weren't for wage deductions the average worker never would pay for anything. I think it is a fine system. Keeps them honest—and it's the only way you can collect."

"I disagree with you and disapprove of any deductions. It may be all right to deduct house rent and light bills from the worker's wages, but I don't think his store accounts, coal and doctor bills should be deducted. In the first place, it takes too much out of his earnings each week to pay these bills, and in the second place it destroys self-reliance. Another thing, if the mill sells store checks to the employees on credit there is a temptation to resell these for cash at a loss."

"You are crazy, Pete!" said Bill pityingly. "If the mill didn't help out the workers by giving them credit they all would be in the hands of loan sharks. I think it is a splendid system from the workers' standpoint."



Pete . . . . was staring moodily at the ceiling

"No, Bill, I am against it. In the first place, just one abuse in the industry will give the system a black name. Besides, it's against the law now to deduct anything from a worker's salary unless you can prove that the mill does not make any profit whatsoever out of the transaction. The whole idea is bad."

Bill looked sour. "It's been a good system for 150 years and it's still good enough for me. Leave it alone."

Should the mill make payroll deductions or extend credit to workers?

Letters from Readers

Value of Mill Athletics Doubtful

"Gold Brick Basketball Players" Pete & Bill, April, 1941

Editor, Overseers' Corner:

With reference to your article on basketball players in the Overseers Corner, the question, "Do Mill Athletics Disrupt Operation?" is probably as controversial as any you will have to contend with in its effect on employee relations. If an athletic program can be carried on in a manner that does not conflict with mill operations, it probably does assist materially in building up a good feeling in the organization. However, it is most difficult for those in charge of this program not to ask for concessions, such as letting workers off before stopping time, taking them off shifts which interfere with the activity, and in other ways which cause resentment among the non-athletic workers to the extent that any recognized benefits are greatly minimized.

W. R. Beldon
Manager, Clark Thread Co. of Ga., Austell, Ga.

"I Make 'Em Do It."

Editor, Overseers' Corner

Everyone resents the idea that he is being bossed. To carry a chip on one's shoulder and then dare someone to knock it off is dire foolishness and sheer conceit. The man who concedes in his mind that he is being forced to do something is at the outset a subject who will not fall into line for a program of good spirit and cooperation. So many men, like myself, started out on the supreme

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

theory that to learn the mechanical and theoretical end of the business, and then the later study of men and human nature, would shape our abilities of management more than anything that we could do. However, on the other hand we meet many men today who can't set a spindle or piece a broken end and yet who are excellent leaders and managers of men.

Why? Because they learned the psychological tendencies and traits of human nature.

Some factors entering into management are as follows:

Threats are as far from good management as east is from west. Some dote on this method and manage to get by.

Deception is a means of getting workers to do things, but it reaps bad effects; and when used it means backward movements rather than forward steps.

Finesse is not deception, but artifice and a type of trickery that isn't at all exemplary. Yet we find lots of it in many systems of management. Why? Many think: "I will get that done, regardless. The boss will appreciate it, and I'll have another feather in my cap."

Having consideration for the other fellow and his feelings is the greatest major asset that any man can possess. This brings respect.

The greatest breach of management that can be committed is to refute an order publicly after a key man has issued it.

Naturally, the man who criticises most needs most criticism.

Tact and diplomacy are necessary requisites for good management.

LAMAR FOGEL
(*South Carolina*)

Safety Instructions for Maintenance Men

1. If he is to work on any power-driven machine or other power equipment, he makes sure that it is locked or otherwise out of commission and that it cannot be set in motion without his permission.
2. He wears snugly fitting clothing and any other protective clothing that he might need, such as rubber gloves, goggles, etc.
3. He uses only safe tools in good condition and carries all knives closed or in a sheath.
4. He is especially careful of electric-shock hazards and uses only portable electrical equipment which inspection shows to be in good condition.
5. He does not overload hoists, ropes, chains, scaffolds, ladders, or other equipment or structure which he may use to support loads.
6. He never works alone under conditions which he knows to be extraordinarily hazardous, such as hot lines.
7. He is careful to use the right tools that are the right size for the job. He faces the jaws of an adjustable wrench in the direction of the pull.
8. He keeps the safety catch on when he is changing or setting the gears on a machine. He keeps the guard over all gears.
9. He looks to see if anyone is working on the frame before starting it up. He does not clean any part of the machine while it is in motion.
10. He bends down the ends of all cotter keys to prevent injury on same. If he has to work where there are sharp edges he covers the sharp edges with cloth.
11. When pushing on a wrench in a tight place he does not wrap his fingers around the handle, but pushes with an open palm so that if it slips he will not skin his knuckles. He knows that it is safer in most cases to pull on a wrench rather than to push same.
12. He replaces all safeguards that he may have removed while working, for he does not want to be responsible for an accident.
13. He uses the right oil for the machine he is oiling and he does not use too much oil, for he knows that too much oil will leak out on the floor and may cause someone to fall.
14. He knows it is foolish to try to oil too many bearings from one position; so he shifts his position so he can oil in safety.
15. He avoids hurrying and he keeps his mind on his work.

—*National Safety Council*

Company Profits From Amateur Athletics

"Gold Brick Basketball Players"
Pete & Bill, April, 1941

Editor, Overseers' Corner:

We all know the old saying that two can't be right, but in this particular case Pete and Bill both are right on the question, "Do Mill Athletics Disrupt Operation?"

Pete is right when he says that it produces good employee relations. We have a baseball team for boys and basketball teams for girls and boys, and a happier bunch couldn't be found anywhere. They all seem to give their best while on the job.

Bill is right when he says that it hurts production, but a mill village is a dull place if it doesn't have some of these recreations. Bill says to hire professional players, but the cost of professional players would more than triple the cost that would result from letting the players off who work in his department; and besides, these professional players couldn't maintain good company-employee relations that would develop from having employee players. And good relations within industry is what is needed so much these days.

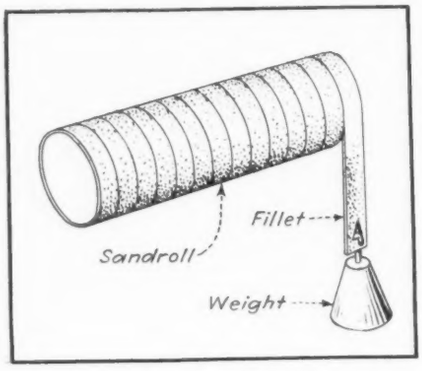
HOMER J. CABANISS
Avondale Mills, Sylacauga, Ala.

Overseers' Practical Helps

Covering Loom Take-up Rolls

The biggest task in covering a sandroll while it is on the loom is in getting the fillet tight enough. A weight placed on the loose end, as shown in the accompanying illustration, will hold the fillet while it is being tightened and make it unnecessary to tack the covering to the roll until all possible slack has been taken out. A spring attached between the fillet and the cloth-lift rod, rocker shaft, or protector rod will serve the same purpose.

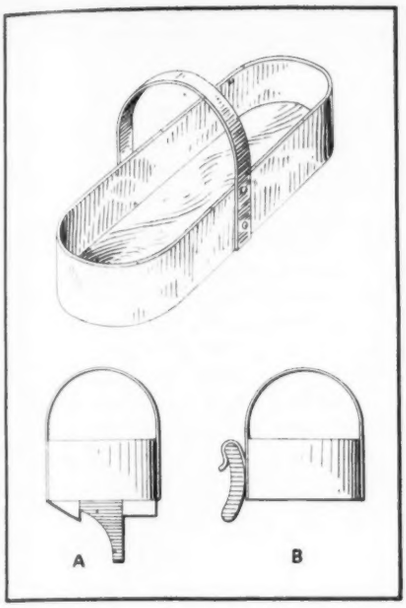
W. W. (*Georgia*)



Covering take-up roll, using weight to tension fillet

Loomfixers' Tool Kit

While the practice of carrying tools in the pockets has some small advantage over carrying them in a tool kit, the advantage is offset by the bother of carrying the several pounds extra weight and the wearing out of the pockets. With a kit such as the one pictured, many more tools as well as small repair parts can be carried and many trips to the work bench saved. The kit can be set on the floor or placed on the breast beam of a loom. Two wooden cleats, as shown in *A*, adapt it to the breast beam of X-Model looms.



Loomfixers' tool kit

and one or two hooks riveted to the side, as shown in *B*, adapt it to E-Model looms. Bobbin guides from a shuttle make excellent hooks for this purpose. The sides and handle of the kit are made of old belting; the bottom is made of wood.

W. W. (*Georgia*)

Attention to Small Repairs Prevents Long Shutdowns

Weavers should be trained to call the loomfixer to repair small jobs, and loomfixers should be encouraged to handle such jobs ungrudgingly, knowing that it will obviate more work later. Such an attitude does not require a mollycoddling of one by the other; it is a simple demand for each to do his part of the work earnestly and judiciously.

There is also another angle to this. If a loomfixer takes two or three hours at one loom, what happens to other looms in need of attention? What becomes of the production on those looms? Viewed thus, it becomes clear that not only is the production of the loom in question curtailed, but the production of other looms is also affected.

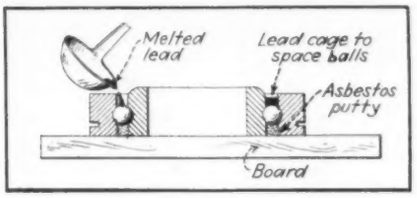
Weavers for the most part are on a piece-work basis; any looms out of production are a definite reduction in wages. Loomfixers' wages are usually based on straight hourly rates, piece rates, or hourly rates plus bonus for quality and production. Loomfixers on a straight hourly rate have their reputation and good standing to uphold by giving the best possible attention to the looms in their sections. Those on a piece rate basis depend on all the looms in the section. Where the hourly rate plus bonus is the method of pay, it is definitely to the loomfixers' advantage if the looms produce both quantity and quality.

S. P. (*Massachusetts*)

Home-Made Ball Cage for Pump Bearing

Suppose your dye house was so busy it had to operate on Sunday. And suppose that some Sunday, with all stores closed, and with only one hour before the next wash period, the ball cage in the bearing of the water pump wore out and disappeared, leaving a pump that would produce hardly a trickle. This is the problem which recently confronted the master mechanic in a New England plant, and his solving of it is a good lesson in ingenuity.

The wearing out of the ball cage had allowed the balls to come together, throwing the shaft out of alignment and producing a condition that would be disastrous to the continued operation of the pump.



Cross-section showing how lead ball cage was poured

The problem of pumping enough water to finish the batch then in the vats was solved by a home-made ball cage which the master mechanic made on the spot. The ball race was laid on a smooth clean board, and the balls were spaced evenly and held in place by babbitting putty. Hot lead poured into the spaces between the balls produced a cage which, when pared with a pen knife and cleaned of putty, was a satisfactory makeshift.

Incidentally, the pump was back in operation within the hour.

H. A. L. (*Massachusetts*)

Spring Tension on Cards

Pros and cons discussed at S.T.A. meetings

VARIOUS METHODS of compressing card sliver in order to get more of it in the drawing can and thereby increase the doffing interval has been a hot topic in the various divisional meetings of the Southern Textile Association since the defense program has put great quantities of productive equipment on three shifts and in some instances caused a bottleneck in the carding department. A particularly interesting discussion took place last month at the Spartanburg, S. C., meeting of the South Carolina Division; the subject also was discussed in lesser detail at the Raleigh, N. C., meeting of the Eastern Carolina Division. Other meetings have also gone into the matter.

Frank D. Lockman and one of his hobbies. Mr. Lockman spoke at the Spartanburg S.T.A. meeting

There are three possible ways of getting more sliver into the can; viz., putting compression springs on the calender rolls, inserting a smaller coiler tube, and reversing the direction of the can. The last named way is not considered to be a particularly practical method. The first method—compressing the calender roll with a spring-tension arrangement—is in wide use today and generally is liked despite rather intense objections in some quarters.

At the Spartanburg meeting Frank D. Lockman, superintendent of Monarch Mills, Lockhart, S. C., and president of the Southern Textile Association, commented favorably on the use of the spring tension. [Details of the installation at Monarch and the results of tests run there were published

in the February issue of TEXTILE WORLD.] Mr. Lockman stated that he has had 153 cards equipped with this device for more than a year and that he is able to get 30% more sliver in the can without lowering breaking strength, quality, or evenness of yarn. He reported fewer ends down in the carding department, and asserted that ends down in spinning were not appreciably affected. While experimenting with the spring devices, he at first got stretched sliver and lighter numbers, but this trouble was eliminated by turning down the calender rolls and reducing the amount of tension. Overcompression is the chief cause of trouble he reported, saying that he originally tried to get 40% increase in the cans, which was too much.

The complications which result from overcompression of the sliver were confirmed by another member who said that he is putting an additional 50% of 53-grain sliver in the can but is not satisfied with the results. At the Raleigh meeting, several users of the spring tension said that they are putting from 15 to 20% more sliver in the can and are very pleased with the results. The greatest successful increase reported at Raleigh was 45%, or 14½ lb. as compared with 10 lb. previously.

On the other side of the picture, Mr. DeBrule, of Springs Cotton Mills, Chester, S. C., reported at Spartanburg that he thinks the use of spring tension tends to force bad work through the card and cause ends down in later processes, especially in spinning. This condition can be improved somewhat by replacing worn trumpets. Incidentally, he reported that it is poor policy to plug and rebore an old trumpet in view of the low cost of a new one. After using spring tensions for two years he discarded the devices.

The chief fault of the spring tension, according to Mr. McNeil, is the increased power consumption which more than offsets an increase of 30% in can content. He described a test run by him on 24 cards which showed the cards to require ⅛ hp. more per machine. On this basis the spring tension would have run up the power bill in his mill by at least $1,200 annually. When he first applied the springs to his calender rolls he found that his yarn was not as even as before, so he opened up the drawing rolls (cork). The trouble with this procedure, he said, was that it tended to nullify most of the advantages of compressing the sliver.

Mr. DeBrule added that he believes a properly-set trumpet and properly-made lap will put as much sliver in the can as the tension device. Further, he stated that reducing the size of the hole in the trumpet by one-half probably would not require as much power as the spring tension to produce the equivalent output.

E. H. Atkins, overseer of carding, Alice Mfg. Co., Easley, S. C., reported that he has used the reduced trumpet hole for five months—without the spring tension device—with no loss of breaking strength or evenness; the only change noted being that the card sliver headed up a little bit on the frame.

Another topic mentioned at several spring meetings has been "plow grinding" of card clothing. In most instances there has been a difference of opinion as to just what is meant by plow grinding. No one at the Spartanburg meeting was familiar with plow grinding as such, but several reported on the use of a grooved emery fillet which gives a side-grinding effect. The majority of members said that they prefer a No. 30 fillet for No. 110 wire, although one uses No. 24 fillet for the same job.

The Eastern Carolina Division elected the following officers: George Gilliam, superintendent of Sterling Cotton Mills, Franklinton, N. C., chairman; D. E. Long, Oxford, N. C., vice-chairman; V. E. McDowell, Roanoke Rapids, N. C,. secretary. J. E. Shaw was elected to the executive committee.

The South Carolina Division elected Wallace Splawn, Pelzer (S. C.) Mfg. Co., general chairman; G. P. DeBrule, Springs Cotton Mills, Chester, S. C., chairman of carding and spinning section; F. D. Lockman, Jr., Monarch Mills, Lockport, S. C., chairman of weaving and slashing section.

What Is Good Shuttle Life?

Question discussed at meeting of South Carolina Division, S.T.A.

LIFE OF SHUTTLES and methods of increasing shuttle life were the principal weaving topics at a meeting of the South Carolina Division, Southern Textile Association, held recently in Spartanburg, S. C. The weaving discussion was lead by J. H. Burgess, weaving overseer of Marion (N. C.) Mfg. Co., and formerly of Woodside Cotton Mills, Fountain Inn, S. C.

Shuttle life on X-Model looms, as reported by members, was very broad in its range. One member stated that his mill was finding it necessary to buy 550 shuttles per month for 138 X-Model looms, running on three shifts; a second member went to the other extreme with the statement that in his mill shuttles ran an average of 11.92 months, operating on two shifts.

In the opinion of most of those present, the use of a thread cutter which requires a large slot in the shuttle is one determining factor in shuttle life; the reason for this being that the shuttle is so weakened by the slot that it breaks much more quickly. A redesigned binder was described as contributing generously to shuttle life, the description being made by the member whose shuttles run 11.92 months. The binder is made perfectly straight, with no curve or swell. As reported, this permits the shuttle to be thrown perfectly straight, eliminating much wear.

The effect which the count of the filling yarn has on shuttle life was brought out by Mr. Burgess. The consensus was that fine yarns and more infrequent bobbin changes increased the length of time shuttles would last.

A discussion of leather vs. fabricated loom pickers brought out the statements that the fabricated picker requires closer settings on looms, and that shuttles must box perfectly in order to run satisfactorily.

Another topic discussed was filling breakage on the loom. Frank D. Lockman, superintendent of Monarch Mills, Lockhart, S. C. stated that he has found the following things to be some of those which cause looms to break filling: filling fork passing through the grate too far or at the wrong angle; improper adjustment of pickers, causing the shuttle to rub the filling against the box; improperly boxed or bouncing shuttle; excessive power on the pick. In connection with the subject of filling breakage, there was considerable discussion on the suitability of using the top holder with the Stafford thread cutter. Opinion was somewhat divided, some members stating that the top holder interferes with the operation of the thread cutter, and others maintaining that better work is done when using the top holder; all agreed that the device gives good results when the Stafford thread cutter is not used.

On the subject of plain vs. tape selvages on rayon challis, some of those present stated that with the plain selvage considerable trouble was had with ends breaking in the edge of the selvage. A reason for this, suggested by Mr. Lockman, was that incorrect harness timing causes the shuttle to break the selvage ends.

Automatic Boiler Operation

Possible in high-pressure power plants through use of regulators and signal system

By N. T. PEF

IN BOILER OPERATION the two things that need constant control are the water level and the steam pressure. In older plants these were controlled entirely by hand, but in newer plants the regulation is mechanical and automatic, and the operation of some boiler rooms today is 100% automatic. With 100% automatic operation there are no boiler-room attendants as such, and the only attention the boilers receive is periodic inspection, the length of the period between inspections being several hours. In the past, this was possible with low-pressure heating boilers only, but now the practice has been extended to include high-pressure power boilers and is the result of the high degree of perfection of regulating and control equipment.

Most boiler rooms, if at all modern, have automatic regulators on the water end for controlling feedwater, pump pressure, and water in the open heater; on the steam end, regulators control the draft and fuel feed, and there is a signal on the steam pressure. The steam-pressure alarm alone will indicate faulty conditions on any of the controls, but individual signals make possible the correction of these conditions before the steam pressure is affected.

In order to have 100% automatic operation, there must be, in addition to the automatic regulators mentioned above, automatic warning signals which work when any of the regulators stop functioning or function erratically. In a boiler room fully equipped with regulators, but with no signals, an attendant must be present at all times to see that the regulators are working properly.

There should be at least one signal on the water end of the boiler; that is, a high-low water alarm. Any fault with the feed-water regulator, the excess-pressure governor, or the water regulator at the heater, sooner or later will be reflected on the high-low water alarm; but, for more complete protection, there should be signals on the excess-pressure governor and high-low water at the heater. A satisfactory type of alarm on the excess-pressure governor is a Bourdon tube, set for maximum and minimum pressures. With these additional alarms, erratic conditions can be anticipated before the water level is affected.

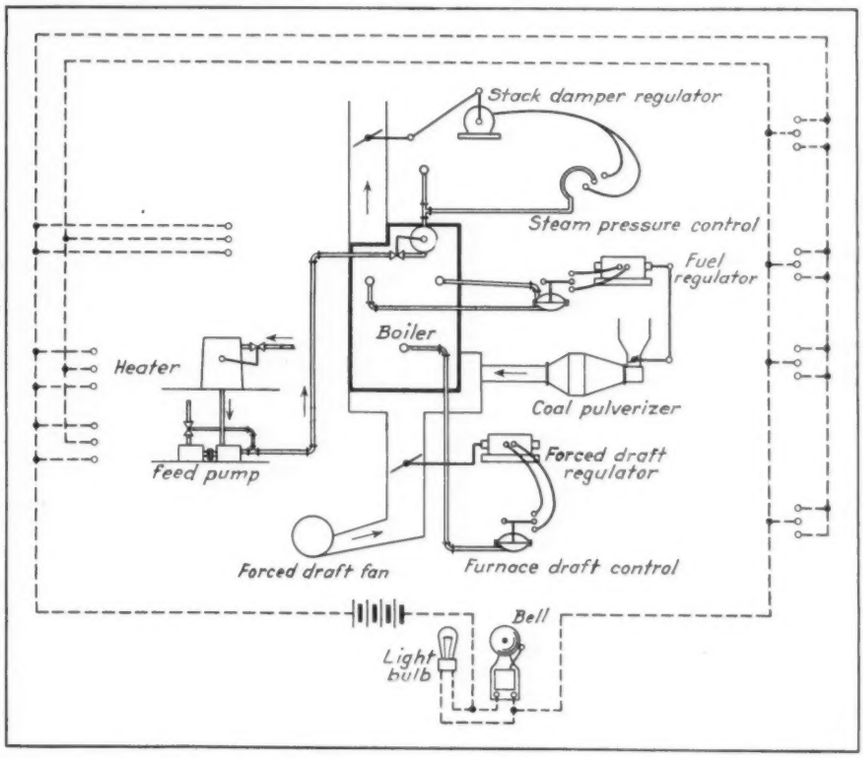
ON THE STEAM END, besides a high-low pressure signal, signals should be placed on all controls and set for the points of extreme travel. This means a signal on the stack draft, one on the fuel control, and one on the furnace draft. There also should be one on the CO_2 machine or for the air-steam ratio.

A layout for automatic boiler operation is shown in the accompanying diagram. The water level in the boiler controls the feed-water regulator, and the opening and closing of this changes the feed-water pressure, which in turn controls the excess-pressure governor; this being also compensated for changes in the steam pressure. A constant steam pressure means that the boiler is in equilibrium in input and output of heat. When the heat input is greater than the output, the steam pressure goes up, and vice versa. The stack draft can be motor controlled, so that it remains stationary with constant steam pressure and runs in one direction with a rising pressure and in the opposite direction when the pressure falls. Changes in stack draft mean changes in the air flow which creates a differential draft across the boiler, and this actuates the fuel control, making it proportional to the air flow. Simultaneously, the furnace draft control maintains an equilibrium between the forced and induced drafts.

The dotted lines show the signal hook-up. The alarms of all the controls are wired together and operate a single signal. The two contacts on the negative wire represent the maximum and minimum, or the extreme positions of travel of the various controls. With any one of them closed the signal is given.

With powdered coal, oil, or gas, one routine inspection each 8-hr. period should be enough. Once in 24 hr. each control should be checked by moving it to the positions of working the signal; that is, in the case of water level, force water into the boiler until the high-water alarm goes off and then cut the water down until the low-water signal goes off. Follow the same procedure with all controls. Stoker-fired boilers require more frequent inspection.

The signal, consisting of a light and a bell, should be located in the engineer's office or at any point at which some attendant is always present. On hearing the signal the operator can proceed at once to the boiler room and in about a minute or less should locate the trouble.



Diagrammatic layout of 100% automatic boiler; dotted lines indicate signal system connections

QUESTIONS & ANSWERS

Acetate Staple Spinning Problem

Technical Editor:

We are sending a sample in which you will note small tufts of white that show up rather prominently. The yarn from which this cloth is woven contains 80% 1½-den. bright viscose rayon staple, and 20% 3-den. dull acetate rayon staple. The white spots are acetate, and we are wondering if you could offer some suggestion as to what should be done to overcome them. Is it that the stock has to be more thoroughly broken before carding, is it waste in the spinning, or something else, possibly in the finishing? Any suggestion along these lines will be much appreciated. (8802)

The fabric submitted shows a fault quite common to this construction. During the spinning process the coarser acetate staple comes to the surface of the strand. Any rough or sharp edges tend to slip these projecting fibers into little knots similar to neps, which are picked up, carried along, and finally bound into the yarn. On close inspection, it will be seen that most of these bunches of acetate fibers are lightly bound on the surface of the yarn.

Any places in the process that involve friction should be checked carefully. Such points as rough or worn travelers on spinning frames and twisters might be a source of this trouble. Also, all guides and tension devices must be smooth and polished. Roll clearers should be picked often, and no loose lint or fly should be allowed to accumulate on roll beams or thread boards. Cleanliness throughout all stages of manufacture is of prime importance.

Ordinary finishing processes will not hide this slight defect; a napped finish, where the fiber is pulled out slightly to cause a woolly appearance, will hide it.

Machinery for Army Socks

Technical Editor:

In your May, 1941, issue you stated that the Army Quartermasters Corps is anxious to locate manufacturers with 48 to 54 needle knitting machines not below 4½ in., which can be used in the manufacture of loosely knit rope socks made of jute. Does this imply a sinker top jersey machine? (8803)

In answer to this question the Philadelphia Quartermaster Depot advises that if "sinker top jersey machine" refers to a circular hosiery knitting machine making a plain or jersey stitch, it should be suitable for the manufacture of the jute socks in question. The specification covering the sock is P.Q.D. No. 58, and copies can be secured from the Quartermaster Depot. Additional data on this specification will appear in an early issue of TEXTILE WORLD.

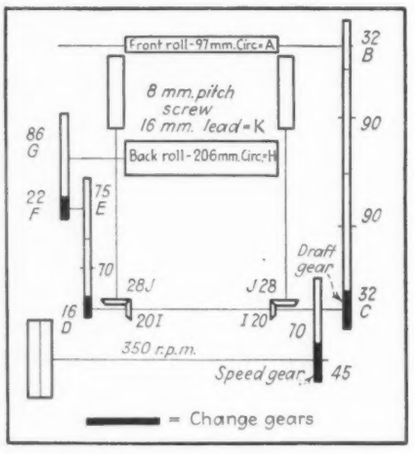
Calculating Gill-Box Draft

Technical Editor:

I am interested in getting information regarding draft on an interesting gill box. Would you be good enough to define back draft and total draft for me, and also give me the formula for calculating the above. (8787)

In a gill box there are back draft, front draft, total draft, and tension. Back draft refers to the drafting action of the fallers; e.g., the fallers deliver a greater length to the front-roll nip than they receive. Front draft refers to the drafting action of the front rolls; the front rolls deliver a greater length than received from the fallers. Back draft multiplied by front draft equals total draft.

The calculations are simple. Using



the details given in the accompanying gearing diagram:

$$\text{Back Draft} = \frac{G \times E \times I \times K}{H \times F \times D \times J}$$

$$= \frac{86 \times 75 \times 20 \times 16 \text{ m.m.}}{206 \text{ m.m.} \times 22 \times 16 \times 28} = 1.013$$

$$\text{Front Draft} = \frac{J \times C \times A}{K \times I \times B}$$

$$= \frac{28 \times 32 \times 97 \text{ m.m.}}{16 \text{ m.m.} \times 20 \times 32} = 8.49$$

$$\text{Total Draft} = \frac{G \times E \times C \times A}{H \times F \times D \times B}$$

$$= \frac{86 \times 75 \times 32 \times 97 \text{ m.m.}}{206 \text{ m.m.} \times 22 \times 16 \times 32} = 8.6$$

Total Draft = Back draft × Front draft = 1.013 × 8.49 = 8.6

Note that 8 m.m. pitch, double-thread equals 16 m.m. lead, or active faller travel of 16 m.m. for each revolution of the screw.

Tension is a form of draft which merely stretches the entire sliver, but does not cause displacement of fibers: i.e., there is no movement of fibers over fibers. Excess tension becomes draft without control, and so causes unevenness. The amount of tension in the ends between creel and feed roll can affect the amount of back draft necessary to obtain the right condition of the stock in the fallers, and affect the ratch conditions.

Trouble in Fulling Woolen Fabric

We have a woolen cloth which, after fulling, shows cockles or uneven places once in a while. Our yarns show only slight variation. The particular piece weighed 22.4 oz. off the loom, against a calculated 22½ oz. We are using 30% noils in our blend. The cloth has 56 picks per in. What are the chief causes of unevenness and cockling of this type? (8719)

Defects of this nature may be attributed to one or other of the following causes:

Uneven soaping. The preliminary soaping is very important, and lack of uninform application of soap on the piece before fulling invariably results in uneven and unsatisfactory fulling.

Lying too long in wet state before final scouring or drying. Some portions of the cloth may become dryer than others—with the result that, when the piece has been through the dryer, there are likely to be variations in shrinkage. Those portions which were dry or partially dry will not respond to the stretching action of the dryer as readily or fully as the wetter portions.

Combination of weaves of varying degrees of firmness.

Variation in tension during sectional warp dressing.

Variation in shuttle tension during weaving.

In the absence of any material evidence showing the defects which are troubling you, we are inclined to the belief that your trouble lies in the soaping process. However, it would be wise to check up on the other possible causes mentioned above.

LOOMFIXERS' MANUAL

WOOL SECTION—Chapter XII—Continued

By EUGENE P. SCHREMP

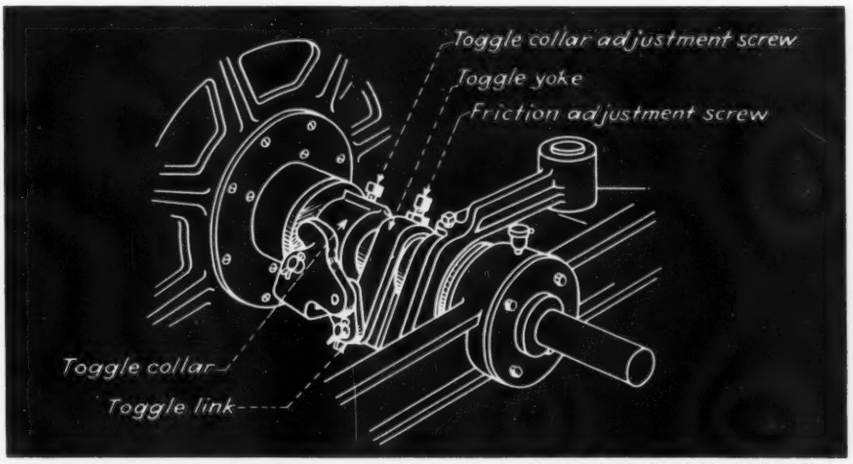
Shipper and Brake Mechanisms

AFTER A LOOM of Crompton & Knowles W2 or W3 type has run for some time, and the adjusting screw has been turned to the end of the thread, do not try to remedy the situation by putting in a longer setscrew, as this will only cause the yoke to bind. Also, do not tighten the turnbuckle, as this will cause the links to go beyond their centers and the shipper handle will not knock off properly. Sometimes the latter practice will cause the handle to release only a little way and the loom will continue to run. If this happens and the filling breaks, the loom may continue to run and cause mispicks.

The proper way to remedy such a situation is to loosen the setscrew in the toggle collar and drive the collar about $\frac{1}{16}$ in. nearer the friction gear. After the setscrew has been re-tightened, the proper amount of friction can be obtained by loosening the adjusting screw in the yoke. The parts concerned are marked in Fig. W16. This operation can be repeated until most of the play between the toggle collar and friction plate has been removed. It then becomes necessary to install a new friction plate. Instructions for installing were in the December installment.

There are several different methods of installing new corks in friction plates. One good way is to heat the corks in boiling water and then drive them in the plate with a mallet. After the corks dry, the plate should be put in a lathe and the face of the corks trued up. If this is done the plate will be square with the friction gear. Should no lathe be available, a collar of the proper size to fit around the corks can be used as a template and each individual cork trimmed with a sharp knife. Then the face should be finished with sandpaper.

When a new plate is installed, the driving clutch must be readjusted. To do this, use a piece of iron $\frac{1}{16}$ in. thick as a gage between the toggle collar and the friction gear. The toggle collar should be pressed firmly against the gage and the setscrew in the collar tightened. When the gage is removed there will be $\frac{1}{16}$ in. between collar and fraction plate. Next, the adjusting screw in the yoke should be turned in about $\frac{1}{4}$ of its length. Then, with the shipper handle off, so adjust the turnbuckle that there is about $\frac{1}{4}$ in. clearance between the swivel sleeve and the outboard bearing. The adjusting screw should then be tightened to give the proper amount of friction. When the clutch is in driving position, the two links in the yoke should be about $\frac{1}{16}$ in. from being parallel with the yoke. These links should never be allowed to go beyond their centers. If the links should do this, the remedy is to move the toggle collar nearer the friction plate and loosen the friction adjusting screw.



Courtesy of Crompton & Knowles Loom Works

Fig. W16. Parts concerned with securing proper friction on worn looms

Links in the shipper handle are adjusted by setscrews in the brake-release handle and brake-release link. When the brake is released and the shipper is in running position, a line drawn through the center of the shipper shaft and the two holes in the links should be as nearly straight as possible. Tension on the shipper spring should be just enough to lock the shipper, when the handle is in running position.

BRAKE MECHANISMS should be so adjusted that when the filling breaks or runs out, the loom will stop with the reed about 1 in. from the fell of the cloth. If the brake does not hold properly, the loom will turn over and the weaver will have to turn the head motion over to find the shed in which the pick was broken. Most brake bands on W2 and W3 looms are lined with steel-backed cork-composition material. When installing a new brake band care should be taken to have clearance between the band and the brake wheel. A good way to check this is to run a drop wire around the brake wheel. Turning the guide on the brake stud will raise or lower the band. A rod head at the end of the brake rod can be used to loosen or tighten the brake.

To adjust the turnbuckle in the brake-connector lever, have the brake handle forward with the brake on. So adjust the turnbuckle that the brake handle is as far forward as it will go. At this point there should be a slight tension on the brake spring. Do not tighten the turnbuckle beyond this point, as the brake will then not hold. The setscrew in the top part of the brake handle should be so adjusted that when the brake is released, the link will be vertical and not go beyond its center. This allows the brake handle to knock off easily.

The brake handle at the head-motion side of the loom can be adjusted by the setscrew or by loosening the cap. There should be $\frac{1}{16}$ in. clearance between setscrew and protector knock-off lever. When any adjustments are made on the brake motion, it is important to check the filling stop-motion knock-off arm. Changing the position of the brake handle can cause too much clearance between the knock-off arm and the projecting post on the knock-off lever. There should be no more than $\frac{1}{8}$ in. between arm and lever.

LOOMFIXERS' MANUAL

COTTON SECTION—Chapter XVI

By IVAR MOBERG

Box Multipliers

BOX MULTIPLIERS have for their purposes the calling of the boxes in conformity with a prearranged filling pattern draft and reducing to a minimum the number of chain bars required to produce any particular pattern. There are numerous types of box multipliers, some independent, some combined with dobbies, head motions, or jacquards. They vary from the relatively simple box multiplier used on gingham or dress goods looms to the more intricate multipliers used in weaving table cloth, bedspreads, and blankets with multicolor cross borders. These latter have three- and four-chain combinations, and some of them have a reversing arrangement whereby the box chain can be moved in either direction, or rocked back and forth on any two chain bars for a number of picks. We will here discuss only the more intricate types, for if these are understood the simpler types can be easily mastered.

One of the most intricate types is the Crompton & Knowles four-chain box multiplier. While the setting and adjustment of this multiplier is relatively simple, the art of building a chain to take full advantage of its capabilities is not clearly understood by many loomfixers. Fig. C94 shows a four-chain multiplier for a pick-and-pick loom. (For a 4x1 box loom the multiplier has only four box levers, two on body chain and two on border chain, instead of the eight shown on the photograph. The orders of levers may also vary, but otherwise the multiplier is the same.)

To set and adjust this device, loosen the multiplier cam on the camshaft and turn it over by hand until the cam follower rests on the top center. Then move the adjustable giveway stud against the stop in the giveway lock. Turn the cam until the cam follower rests on bottom center, and make certain the adjustable giveway stud is against the opposite stop of the giveway lock. If it is not, adjust the movement of the upright driving rod, by moving its stud in the cam follower nearer to or farther from the center of the cam follower. The movement of the upright driving rod must be so adjusted that the adjustable giveway stud moves without binding between the extreme stops of the giveway lock. This determines length of stroke.

With the cam follower still on the bottom center of the cam, drop the counter-chain pawl on to the ratchet and ascertain whether the pawl is up against a tooth of the ratchet when the latter is held in normal position by the check pawl. If necessary, lengthen or shorten the upright driving rod, by screwing it in or out of the rod head, until the counter-chain pawl is against a tooth in the counter-chain ratchet. The counter-chain pawl is the only pawl that has a fixed pivot on the upright pawl lever so that the position of the latter must be determined by the counter-chain pawl. While the length adjustment of the upright driving rod is being made, the adjustable giveway stud should be loose to avoid binding. Upon completion of the adjustment, it should be reset to the extreme stop of the giveway lock. Following this, drop the multiplier-chain pawl on to the ratchet and, if necessary, move the pawl stud in the upright pawl lever so that the pawl will be against the tooth of the ratchet.

Turn the multiplier cam on the camshaft until the cam follower rests on top center, and so adjust body- and border-chain pawls that they will rest against the tooth in their respective ratchets. In adjusting the pawls, the ratchets must be in their normal position, held so by their respective check pawls. It is important that each of the four pawls follow through with its ratchet when the latter is snapped into normal position by its check pawl. Do not depend upon the check pawls to snap the ratchets home.

With a half ball on a chain bar under the last lever on the border chain, so adjust the length of the wire connection to the trigger arrangement operating the shield over the body cylinder ratchet that the shield will drop and expose the teeth of the ratchet to the body-chain pawl.

So time the multiplier cam on the camshaft that the movement of the body- and border-chain cylinders will be completed just before the box motion starts to change the boxes.

(To be continued.)

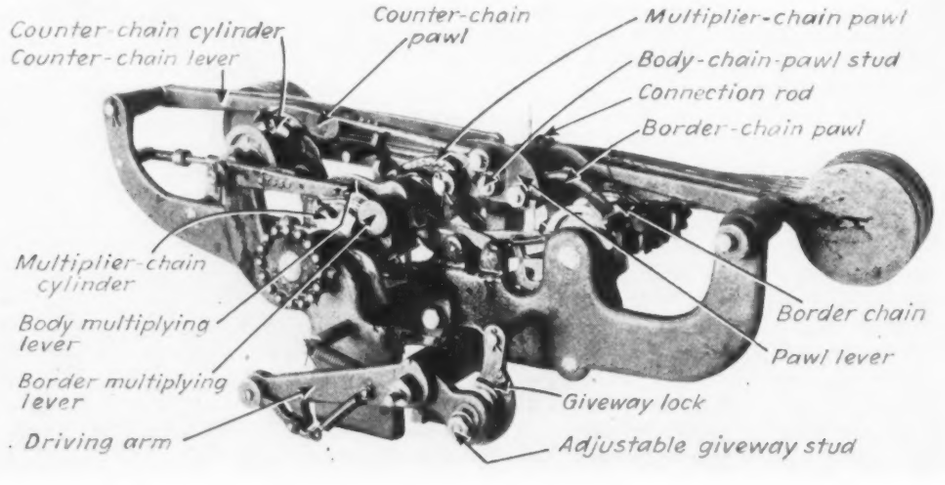
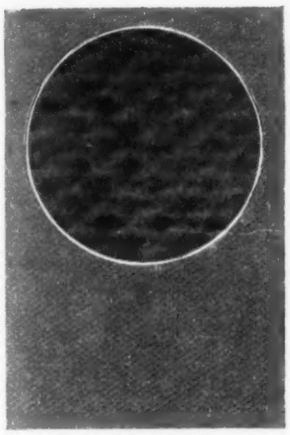


Fig. C94—Four chain multipler for pick-and-pick loom (body chain not showing)

Courtesy of Crompton & Knowles Loom Works

STAPLE COTTON FABRICS



Smooth finished holland shade cloth; the base fabric is print cloth, 38½ in., 56x44, 6.85 yd. per lb.

By JOHN HOYE

Fabric Technician with W. Harris Thurston, New York

This sixtieth installment of Mr. Hoye's series of articles—which began in the January, 1936, issue—continues the discussion of filled and coated fabrics.

Shade Cloths

The base fabrics used for shade cloths generally are print cloths. However, they are more carefully woven and inspected than standard print cloths and usually bring a premium price. Shade cloths also are made from lower-count muslins, and from high-construction cambrics. The serviceability of coated shade cloths depends on the construction of the base fabric and the type of coating applied.

Holland is the most widely used type of window shade cloth. It has a smooth, firm, lustrous finish that may be either flat or glazed, and which is applied to both sides of the fabric. Holland also is made with woven cord stripe effects.

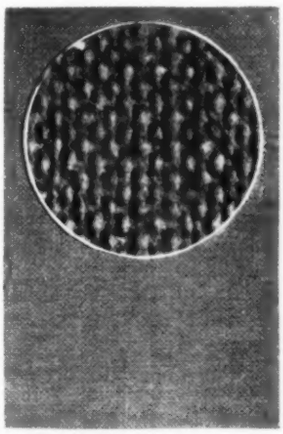
Although hollands are not weatherproof and in time will crack or form pin holes, the smooth surfaces shed dust and dirt easily and can be cleaned with a dry cloth. The finish usually is produced by applying heavy starch and clay to the cloth. The filling mixture is thoroughly worked into the fibers, the yarns, and the spaces between. The cloth is given several runs to obtain the required amount of filling, and afterward is given a friction calender treatment to produce a glazed finish.

Uses of hollands other than as shade cloths are as bookbinding cloths (see TEXTILE WORLD, April, 1941, p. 112), for conveying purposes in the rubber industry, and to wrap rubber tape.

The print cloths used as base fabrics for window hollands include fabrics with the following constructions:

38½ in., 56x44, 6.85 yd. lb.; 39 in., 68x72, 4.75 yd. lb.; 44 in., 72x80, 3.75 yd. lb.; 44 in., 64x60, 4.55 yd. lb.; and 56 in., 72x72, 3.10 yd. lb. The most commonly used construction of cord stripe hollands is 48 in., 72x72 ground (100x72 overall).

Oil color painted shade cloth is opaque, and is superior to and more expensive than holland. It is pliable, washable, resistant to weather, and will not crack or form pin holes. It usually has a dull finish. The fabric is coated by hand brushing or machine application of linseed oil colors; generally one color is used on both sides, but two-color reversibles are not uncommon.



Linseed-oil-color holland shade cloth, machine painted; base fabric is 39 in., 68x72, 4.75 yd. per lb. print cloth

Better qualities of oil color painted shade cloth are made from high-yarn-count fabrics and the paint is thoroughly brushed on by hand; the medium and lower qualities are machine painted. Before they are painted, the fabrics usually are given a sizing of glue on gelatine; the lower-thread-count fabrics used in the cheaper qualities also are filled to add body and weight. Fabric widths of 32, 36, 38, 42, 45, 48, and 54 in. are commonly used.

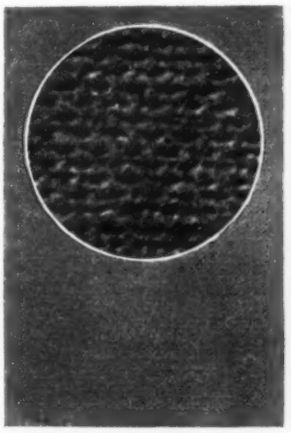
Water color painted shade cloth is opaque and will crack and pin-hole, but it is popular because of the low price and the clarity of the colors. It is made from a low-yarn-count fabric, and is filled and coated with a mixture of color clay and starch and afterwards is calendered.

Fiber shade cloth is not based on fabric, but is made by pressing cellulose fibers into sheet form. It usually has a cloth-like appearance and is washable. It is the cheapest type of shade cloth.

Pyroxylin impregnated shade cloth generally is conceded to be the best made. It is sun fast and waterproof, can be cleaned easily, and will give years of service without cracking or pin-holing. Base fabrics, usually better qualities of print cloth, are impregnated with pyroxylin and with color and filling substances. As a rule, the pyroxylin impregnated shade cloths are given a dull finish. A heavy durable, washable, non-glare shade cloth used for school, hospital, and commercial window shades is made by pyroxylin impregnation of a flat duck. The following D.F. flat duck is commonly used: 38 in., 84x28, 8 oz.

TRACING CLOTHS are made from fine combed-yarn cotton lawns. The base fabrics are filled on one side only, and the finish is parchment-like, transparent, and firm. The lawns must be carefully woven, graded, and inspected, and must be free from slubs, thick and thin places, and other imperfections that impair transparency or tend to roughen the surface. The constructions commonly used are:

40 in., 76x72, 7.80 yd. lb.; 44 in., 88x88, 6.20 yd. lb.; and 49 in., 88x88, 5.55 yd. lb.



Pyroxylin impregnated shade cloth; the base fabric is 39 in., 72x80, 4.30 yd. per lb. print cloth

NEWS OF THE MONTH

Underwear Wage-Hour Committee Appointed

Appointment of an industry committee for men's knitted and woven underwear and commercial knitting was announced May 12 by Wage-Hour Administrator Gen. Philip Fleming. The committee will meet in Room A, Department of Labor Building, 10 a.m., June 16. The 21-member group, representing the public, employers and labor equally, has as its chairman William E. Simkin, of Philadelphia. This committee is to reconsider two minimum-wage orders already in effect. Men's and boys' woven underwear has been operating under a 32½¢ minimum since last July 15, as part of the apparel wage order. Knitted underwear and commercial knitting is under a 33½¢ minimum which became effective May 6, 1940.

Meanwhile ,the Administrator's hearing on the 37½¢ recommendation of the "Textile" Committee was held on May 15, with no special points raised except the manner of handling deductions from wages for rents, etc., which allegedly is sometimes used as a means of cutting wages. The Administrator's decision is pending on both textile and seamless hosiery recommendations: the latter is 36¢.

Tribute to Pickard

An enthusiastic luncheon was given under the auspices of the Textile Square Club in New York, May 27, to mark the new research plan developed by the Textile Foundation and the U. S. Institute for Textile Research, as noted elsewhere in this issue, and also to pay tribute to Edward T. Pickard, now secretary of both organizations. Those who spoke included Franklin W. Hobbs, chairman of the Foundation; Fessenden S. Blanchard, president of the Institute; A. W. Williams, dean of Wharton School; William Carman of the Department of Commerce; Dr. W. D. Appel of the Bureau of Standards, and S. C. Lamport. Harry Riemer, president of the club, presided.

Gastonia's Cotton Festival

The Fourth Annual Cotton Festival of Gastonia, N. C., was scheduled to start on Sunday, June 8, with the dedication of a new airport. Events planned for the week included a street dance, a golf tournament, a street parade, a musical show entitled "A Cotton Yarn," and a cotton ball.

Gov. J. M. Broughton of North Carolina was scheduled to arrive in Gastonia Tuesday, June 10, to officiate in the Coronation, that evening, of Miss Catherine Gray, as Queen, and Joseph W. Lineberger, Jr., textile mill executive, as King of Cotton.

Explains Commerce Bureau Reorganization

The National Conference of Business Paper Editors, meeting in Washington May 23, was given the story of the recent reorganization of the Bureau of Foreign & Domestic Commerce and a glimpse of its plans for the future by Carroll L. Wilson, Director of the Bureau.

"The reorganization of the Bureau," said Mr. Wilson, "was made for administrative efficiency, changes in official designations made in accordance with Department procedure did not change the functions of most of the personnel of the Bureau. Instead, closely related functions were grouped and an administrative officer appointed for each group.

Cotton Association Meetings

N. A. C. M. held a meeting in Boston June 5 at which J. P. Davis of OPACS told how Government proposes to prevent price inflation through setting ceiling levels.

A. C. M. A. is holding a series of luncheon and dinner meetings from June 10 to 19 at important southern points, which will be addressed by Dr. C. T. Murchison, president, Cotton-Textile Institute, W. N. Banks, president, A. C. M. A., and W. M. McLaurine, secretary-treasurer, A. C. M. A. National Cotton Council is cooperating in these meetings.

Record Cotton Consumption

An all-time high for monthly cotton consumption was set in April with 920,142 bales, compared with 623,098 for the same month last year.

Cotton Week Most Successful

The recently celebrated National Cotton Week, the eleventh in the annual series of these merchandising events, is described as "a new milestone in the retail merchandising of cotton," by C. K. Everett, director of merchandising of the Cotton-Textile Institute. The Institute was co-sponsor of the event with the National Cotton Council. First-hand reports reaching the Institute from key merchants in a number of cities indicated unusual retail activity in cotton during the week. The Worth Street district marked the event with two large banners displaying the Cotton Week poster which were suspended across Broadway at Worth Street and across Worth Street at Church.

HERALDING National Cotton Week at the portals of the world's textile sales center, this 20-foot red, white and blue banner was displayed a the corner of Worth and Church Streets by the Association of Cotton-Textile Merchants of New York.

THE "AUTOMATIC BLANKET," made by General Electric Co., was placed on sale in a number of Texas cities last winter and over 1,100 were sold. A heating element produces even warmth, a switch and thermostat permitting the user to set it for desired temperature which is thereafter maintained automatically despite changes in room temperature. Current is stepped down to 10 volts by a transformer giving safety under all conditions. Normally no other blanket need be used for sleeping comfort. Price is $29.95

One-Fifth of Storage Wool Here

Not much more than one-fifth of the 250,000,000 lb. of Australian wool to be stored in the United States by agreement with Great Britain, has yet reached port. The reason is that American-flag ships are filling up with wool purchased by U. S. manufacturers for commercial and military purposes. British ships carry wool here only infrequently.

March imports of apparel wool (in the grease) totaled 87,473,202 lb., a record by over 3,000,000 lb. since March, 1921. This figure includes 15,000,000 lb of British wool for storage, and 72,000,000 lb. of fine and half-blood wools. These statistics are from Wool Tops Associates.

While no wool products are as yet on the priority critical list, officers of the Quartermaster Corps indicated they might be put on soon. Along with scarcity, price problems are expected. The Office of Price Administration has made no move in this field, but the Tariff Commission, upon request of OPM Director of Purchases Donald Nelson, is studying costs of the 1941 clip as compared with that of last year. Nelson estimates that total wool likely to be required by all Government procurement agencies: Army, Navy, Treasury, WPA, Red Cross, etc., will be 259,000,000 lb. in fiscal 1942 as compared wtih 244,000,000 lb. in fiscal 1941.

Some observers have anticipated that, since South American countries know we must have wool and for good neighbor reasons would like to buy it of them, they would up the

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FOR ALL
TEXTILE PURPOSES

QUALITY
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NEW BEDFORD

takes pride in the highest recent increase in sales and income of **ANY NEW ENGLAND CITY.**

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New Bedford

again is prosperous because the older industries are running to capacity and **NEW ONES ARE MOVING IN.**

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Last Year

14 new plants moved to **NEW BEDFORD.**

Why Shouldn't You?

• • •

Our Older Mills

show their **CONFIDENCE IN NEW BEDFORD** by recent large outlays for new plant equipment.

• • •

Advantages of New Bedford:

Skilled workers; abundant pure water; rail, truck, or water transportation; lowest electric rates in New England; floor space available.

• • •

WRITE US FOR THE FACTS

CITY OF NEW BEDFORD

MASSACHUSETTS

MATTHEW A. GLYNN

MAYOR

price. But Government wool experts say that prices will stay within reason, becauses the Latin countries have lost most of their markets except the United States.

New Boost for Cotton

President Roosevelt signed legislation providing for mandatory loans on the five major crops of 85% of parity. The loan on cotton is forecast as 13.6¢ per lb. A Congressional conference committee decided on a parity fund of $212,000,000 to $450,000,000. In addition to that, farmers get their regular soil conservation payments. But the President said, when he signed the loan bill, that he had been assured that the three handouts combined should not exceed parity. Cotton growers seemed to be getting the benefit, as one of the "big five" crops, of the Administration's determination to increase the production of food stuffs for home "nutrition" and for feeding Axis opposition.

Avondale Mills Hold Annual Spring Inspection

The annual inspection trip of Avondale Mills in Alabama started this year at Lafayette, Ala., May 14. During the afternoon Alexander City was visited, the party resting there for the night. The plants at Sycamore and Sylacauga were inspected the following day, and Friday was filled in with trips to Pell City and Birmingham, where the first tour terminated.

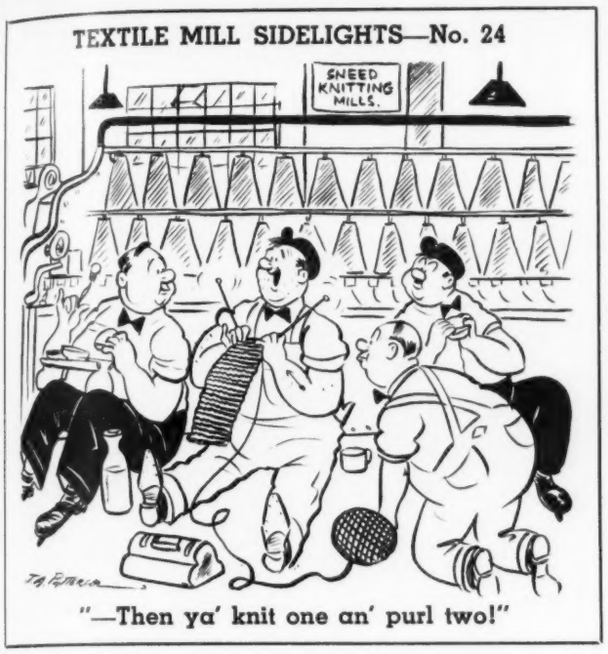
A second tour Friday of the following week took the party to the Cowikee Mills, Inc., at Eufaula and Union Springs, and the third and final trip completed the inspection with a visit to Stevenson.

Prominent local citizens at the various communities visited joined in to add to the pleasure of the occasion, and many unique entertainments were provided as the program developed. Among these were school entertainments, barbecues, banquets, and band concerts. A splendid spirit of loyalty and cooperation was evident throughout.

New Bleaching Process for Cotton Goods

A new bleaching process for cotton goods was announced by G. P. Vincent, of Mathieson Alkali Works, Inc., at a meeting of the Rhode Island Section, A.A.T.C.C., held May 23, in Providence. The bleaching solution employed consists of a mixture of sodium hypochlorite and Textone

RHODE ISLAND SCHOOL OF DESIGN, Providence, R. I., opened its new half million dollar theatre building on April 18. Shown above, this building is the gift of Stephen O. Metcalf of Wanskuck Co. Its large stage will meet the varied demands of the school's 2,600 students, and studios in the building will house the costume division of the Department of Textiles and Clothing.



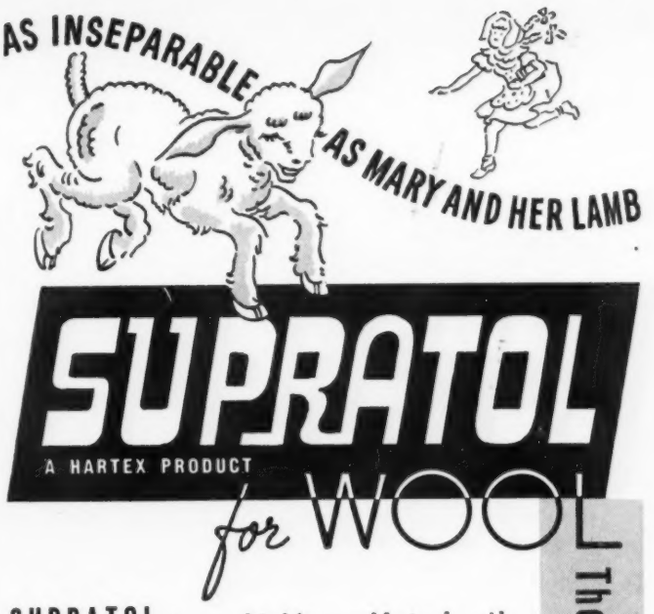
(sodium chlorite) in a ratio of 1½ to 1, in terms of available chlorine and not of weight of salts. It is always used at room temperature. The pH of the solution is maintained at the desired point—8.7 to 10, according to duration of the bleaching operation—by using appropriate mixtures of sodium bicarbonate and sodium carbonate. The new process can be carried out in existing equipment and without radical changes in procedure.

The effect of the addition of Textone, according to Mr. Vincent, is to alter the chemical reactions of the hypochlorite. A new product (probably chlorine dioxide) is formed, which is said to bleach without injuring the fibers in any way, thereby making possible the production of bleached cotton goods that are superior in strength to those obtained by the customary method of bleaching.

Hosiery Trade Practice Rules Issued

Hosiery trade practice rules, which were the subject of a public hearing on Nov. 19, 1940, and which have been under negotiation for some three years, were issued by the Federal Trade Commission on May 18 to become effective on July 15, 1941. Taken overall, the rules are interpreted as helpful to the industry in effecting a sound job of merchandising. Hosiery has heretofore been governed as regards fiber identification by the rayon rules, the silk rules and the linen rules. The new hosiery rules apply of course to hosiery exclusively and overcome the difficulty of applying certain of the fiber rules to this knitted product. After July 15, hosiery will also be governed by the Wool Products Labeling Act.

The rules give a standard definition of lisle, the lowest yarn count which qualifies for such description being a 30s. The cotton used in 30s to 35s may be 1 7/32 in. staple, and in higher counts must not be less than 1⅛ in. staple. The crepe standards developed by the National Association of Hosiery Manufacturers five years ago have been incorporated in the rules. According to the rules the description "irregular" may be used only on a stocking in which the imperfections are limited to irregularities in dimension, size, color or stitch without the presence in the hose of any obvious mends, runs, tears or breaks in the fabric or any substantial damage to the yarn or fabric itself. The rules apply not only to the manufacturer of hosiery, but also to the converter, processor, dyer, finisher, distributor, dealer, importer and/or vendor.

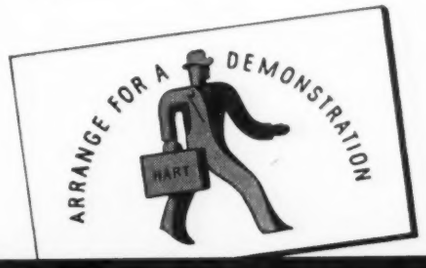


SUPRATOL is a highly sulfated oil which not only promotes level dyeing of wool and assists in penetration but also **protects** the fibers in dyeing, bleaching, drying and in after use. This it does because SUPRATOL, unlike other dyeing assistants, forms a stable chemical compound with the wool fibers. This stable wool-SUPRATOL union protects the fibers and keeps them soft and supple. It also permits drying at higher temperatures without any deleterious effect.

One of the largest woolen mills in New England has, with conspicuous and uniform success, standardized its dyeing operations with SUPRATOL.

Let us show you, in your own mill, how SUPRATOL can make more profits for you by facilitating processing operations and helping produce saleable, high quality fabrics. Our laboratories and technical facilities are at your service.

Write for further details.



The COMPLETELY SUBSTANTIVE DYEING OIL and PROTECTIVE AGENT

THE HART PRODUCTS CORP.
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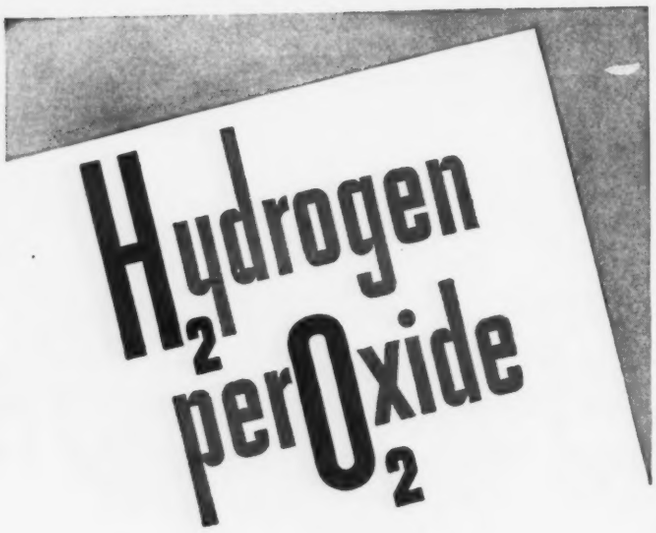

for efficient all-fabric bleaching

Penn Salt 100 volume hydrogen peroxide is a stable and effective bleaching agent . . . safely used on *all* commercial textile fibres. Its uniform oxidizing action assures excellent results day after day, month after month.

You can obtain this hydrogen peroxide in 120 lb. carboys and 265 lb. drums from a distributor near you.

Effective technical assistance: **Penn Salt technicians are at your service to aid in your bleaching problems. Recently, an organization bleaching expensive laces ran into difficulty with damaged goods during bleaching. A careful check-up quickly showed the trouble-maker to be brass fittings in their bleaching equipment. These fittings were removed and damaged goods immediately eliminated.**

Write for information on hydrogen peroxide and any others of our products in which you are interested.

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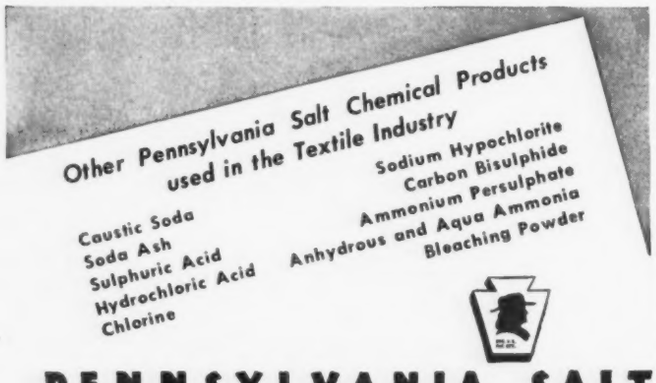

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Chemicals

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TEXTILE CALENDAR

Southern Textile Association, annual meeting, Ocean Forest Hotel, Myrtle Beach, S. C., June 13 and 14, 1941.

Chicago Yarn Men's Golf Tournament, Barrington Hills Country Club, Barrington, Ill., June 18, 1941.

Philadelphia Textile Manufacturers Association, 15th, Annual Outing, Cedarbrook Country Club, June 18, 1941.

A.A.T.C.C., Philadelphia Section, outing, Whitemarsh Country Club, Whitemarsh, Pa., June 20, 1941.

American Association of Textile Chemists & Colorists, annual meeting and convention, Carolina Hotel, Pinehurst, N. C., Oct. 31, and Nov. 1, 1941.

Apex Damage Settlement Near

A tentative settlement of Apex Hosiery Co.'s suit against the City of Philadelphia and the hosiery union to recover damages resulting from the sitdown strike of May and June, 1937, is said to be in the hands of the city officials for decision. It is understood that the plan calls for payment of $110,000 by the union and $15,000 by the City of Philadelphia. Apex has already collected $141,000 from insurance. Litigation in Federal Courts reached a dead-end last year in the U.S. Supreme Court, but a suit seeking damages in excess of $2,000,000 has been pending in the Pennsylvania State Court. The settlement, if accepted, will have been the result of compromise and arbitration.

Students Stage Floating Fashion Show

The students of the Rhode Island School of Design have staged what may have been the first floating fashion show. The girls designed the clothes and modeled them at this original show which took place in Providence, May 7, on the Colonial Line's "Comet," sailing for New York. The next day the show was repeated at Pier 11 in the North River where the boat was docked. Over 60 complete outfits were shown by these imaginative young students. Lace was a particular favorite fabric with the designers.

School Holds Fiber Seminars

Seminars on cotton, wool, and worsted textiles for technical and research men of E. I. du Pont de Nemours & Co., Wilmington, Del., are being held at Philadelphia (Pa.) Textile School. Each class, attended by 17 technicians and members of the school's faculty, starts off with an hour lecture by the regular school instructor in each course. Following this, there is a general discussion period.

Subjects to be covered are: raw materials, yarn manufacture, weave formation and fabric analysis, weaving practice, chemical and physical technology of textile fibers, knitting systems, textile economics, textile costing and marketing.

Sportswear Knitters Set Up Trade Rules

The women's sweater and sportswear group of the National Knitted Outerwear Association, has adopted three "trade practice rules" and is now engaged in arousing retail support for them. The group comprises 40 important knitting mills. Communications have been sent to stores and resident buying offices informing them of the rules, and asking for cooperation in making them effective.

The rules, as adopted, follow:

First, no member shall grant a customer any allowance for store advertising whether in a newspaper, magazine, or other form of publication.

Second, no requests for future deliveries of merchandise will be regarded as or accepted as orders unless they are

UNIFORMITY IN EVERY MIX

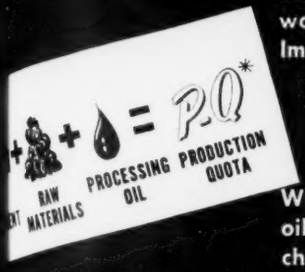
P-Q* hits a new high"

Thanks to SUNOTEX OILS

The key to quicker penetration, better fiber lubrication, improved dyeing and the achievement of a higher plant Production Quota* is the maintenance of absolute uniformity in every oil emulsion bath — the assurance that material, equipment and processing oil are always right.

Tests in many mills are exemplified by the results obtained by one large processor of woolen and worsted stocks. He changed from the best grade of olive oil he could buy to SUNOTEX OILS. Immediately the uniform high quality of SUNOTEX OILS proved their merit and resulted in . . .

- GREATER PENETRATION
- BETTER FIBER LUBRICATION
- INCREASED PRODUCTION
- EASIER SCOURABILITY
- UNIFORMITY IN EVERY MIX



Why have SUNOTEX OILS proved superior in such tests? Just this! These modern textile processing oils have been developed to assure maximum production and their quality is constantly being checked and rechecked to aid you in achieving "tops" in P-Q*.

Now's the time to investigate how you can step-up the P-Q* of your plant with SUNOTEX OILS. Write for the new folder that explains P-Q* . . . and what it can do for you.

SUN OIL COMPANY—Philadelphia, Pa.

SUN OILS

PETROLEUM PRODUCTS FOR ALL INDUSTRIES

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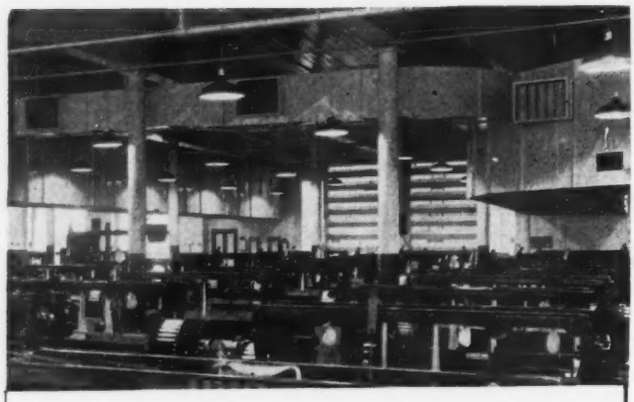
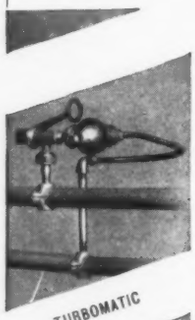


Thirsty Air . . . Tons of It



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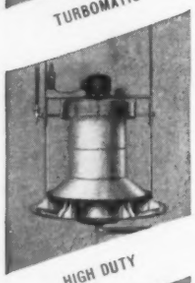
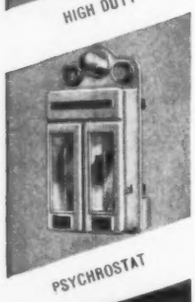


HIGH DUTY



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AIR CHANGER

Your textile mill is an incurable sot. Every manufacturing operation creates thirst in the room air.

To satisfy this continuous and almost unquenchable thirst, many a mill has use for tons of humidified air—every hour. (Know of one that uses nearly 500 tons of saturated air every hour in one department only.)

Several ways there are to make and introduce this humidified air. What is the right way—or the best way—or the most economical way?

Because we make a complete line of humidifying (and Air Conditioning) devices, we are the better able to make unbiased recommendations.

Air Conditioning is bought as an investment—as a useful manufacturing accessory. Only with the right devices coupled with experience to guide right application can you get everything such an investment can bring.

Parks-Cramer Company

Certified Climate

Fitchburg, Mass Boston, Mass. Charlotte, N. C.

bona fide, set forth in writing and are in form complete and proper for an ordinary sales contract.

Third, all packages weighing ten pounds or less, sent on special order will be shipped either by parcel post or express.

Woolen Overseers Name Officers and Give Scholarship

John J. Lyons, Providence, R. I., was nominated for the presidency of the National Association of Woolen and Worsted Overseers at a meeting in Crescent Park, R. I., May 17. Edward J. Wolfendale, Methuen, Mass., and Joseph Scanlon, Holyoke, Mass., were respectively nominated first and second vice-president; Clarence L. Cutler, Hudson, N. Y., being named treasurer, and Bernard J. O'Reilly, Lowell, Mass., beneficial secretary. James J. Burns of Holyoke was renominated secretary. The election will take place this fall. It was voted to establish a scholarship at the Rhode Island School of Design, selection of the student to be made by President Fales of the school in collaboration with the association. Twenty-five new members were elected and 30 applications for membership received for report at the next regular meeting.

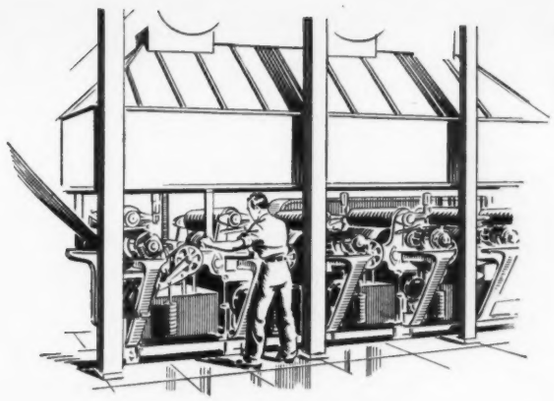
Fiberglas Adhesive Tape for Industrial Uses

Fiberglas adhesive tape, with a pressure-sensitive coating, has been developed by Industrial Tape Corp., New Brunswick, N. J. The new product consists of a woven Fiberglas fabric coated one side with an adhesive, and cut into strips ¼ in. wide or wider. The adhesive tape is expected to find a number of uses in the electrical industry and for insulating other than electrically.

Mothproofing Tests

The committee on mothproofing of the American Association of Textile Chemists & Colorists, with J. Robert Bonnar, of General Dyestuff Corp., as chairman, is developing standard tests for resistance of fabrics and yarns to insect pests and for evaluation of compounds designed to increase the resistance of fabrics and yarns to insect pests. In this project the A.A.T.C.C. committee is collaborating with similar committees of the American Society for Testing Materials and the National Association of Insecticide and Disinfectant Manufacturers. Joint tests are being conducted by a number of cooperating laboratories under the direction of these three

FOLDING 300 pr. of curtains, including draperies and black-out curtains, made by women of several Washington, D. C., churches for American Red Cross-Harvard Hospital now being erected in England. The curtains have been dyed black and treated to prevent passage of light through interstices



New Compartment Washer makes cloth more saleable

"We are convinced that our new Butterworth Compartment Washer is exactly what we needed to turn out more saleable merchandise.

"We are running different weights of cloth. But, there is no scrimping in of the fabric because our Compartment Washer does not build up tension between the nips. Thus, we have corrected a situation that formerly gave us a high percentage of seconds.

"We can control speeds and tension in each compartment because there is an individual motor drive for each set of squeeze rolls. The machine is also equipped with the new Butterworth Micro-Set Housing.

"Our new Washer has five compartments, with provisions made for adding extra compartments to be used in series."

This is a typical example of the results achieved with modern equipment in the wet end of textile finishing.

Under present conditions, a new machine pays for itself two or three times as fast as it does under ordinary conditions.

When textile production returns to normal, the modern mill has lower operating costs, lower prices and a wider margin of profit.

For more than 120 years, our entire time and effort have been devoted to promoting efficiency in bleaching, boiling-out, drying, calendering and dyeing.

Butterworth Engineers are ready to make a careful study of your finishing plant, supervise the installation of modern Butterworth Machines and stay on the job until the new equipment is giving completely satisfactory results.

Let us tell you whether modern Butterworth Machines or improved plant layout will help you to achieve greater yardage, better finishes, higher speeds and lower production costs. Write us today.

H. W. BUTTERWORTH & SONS CO. Phila., Pa., Serving the Textile Industry Since 1820. Offices: Providence, R. I. and Charlotte, N. C. In Canada—W. J. Westaway Co., Hamilton, Ont.

***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

Butterworth

now you can have

. . . more and better light quickly!
. . . without expensive wiring changes!
. . . and, with no "slow-up" of production!

. . . with IVANHOE "50 FOOT CANDLER" RLM *Continuous Wireway* FLUORESCENT LIGHTING SYSTEM

● Are you in a position where you know you can get faster production with better lighting . . . but you're afraid it will cost you too much time and money to get it?

IVANHOE "50 FOOT CANDLER" can lick that problem for you as it has for many other manufacturers under production pressure. Its *continuous wireway* (wiring channels contain all wiring and operating auxiliaries) insures speedy, economical installation . . . eliminates up to 80% of plant wiring conduit.

Because IVANHOE "50 FOOT CANDLER" is *not* a lighting fixture but *a lighting system,* it permits you to get light for some production without waiting for the entire installation to be completed. If you're working against time and want to cut production costs, this new and *better* lighting system can make time do "double-duty" for you. Write for new "50 FOOT CANDLER" Bulletin 1C . . . now.

In this typical weave room, Ivanhoe "50 Foot Candlers" provide 50 foot candles of illumination and speed the production of defense materials.

IVANHOE

THE MARK OF A COMPLETE LIGHTING SERVICE

THE MILLER COMPANY
MERIDEN, CONN.
Pioneers in Good Lighting Since 1844

committees, and the results will be correlated into a joint report. Laboratory methods for performing the tests above have been approved as tentative by the research committee of the A.A.T.C.C. These are subject to any revisions that may be suggested by the outcome of the inter-society co-operative research now in progress.

Seek New Name for Crepe-de-Chine Hosiery

The National Association of Hosiery Manufacturers counsels the makers of "crepe-de-chine" hosiery to seek another name for this product. It is understood that the phrase "crepe-de-chine" conflicts with the definition of crepe for hosiery now officially endorsed by the Federal Trade Commission in the trade practice rules for the hosiery field which go into effect July 15. The Association says, "The yarn is a high twist tram and lacks a compensating twist factor. It is this fact which distinguishes it primarily from what has been established in the hosiery industry as a *crepe* yarn."

Price Control Sobers Textile Markets

Cotton goods markets were shocked to a standstill by the Leon Henderson action in setting a ceiling on combed-yarn prices. As the days wore on the market in fabrics revived and prices gave every indication of holding their own. Near the end of the month first hands sold spot 38½-in. 64x60s at 8⅛¢. Late in the month there were advances on percales of ½ to 1¢. There are numerous tight spots where fabrics customarily used for particular purposes are not available from first hands until October. Mercerized yarn prices were reduced early in June by 1 to 6¢.

Wool goods were quieter during May. Clothing manufacturers for the most part are content to sit back and await deliveries. The wage increase, which went into effect in nearly all wool goods mills in mid-May, had little affect on the market as it had been fully discounted. Unfilled orders in mill hands at the end of the first quarter were higher than for many seasons past. Early prices on tropicals for 1942 are said to be 20¢ a yard higher than the last level for fall 1941. There is some talk of possible ceiling on raw wool prices, but that market has recently been level and steady.

Rayon business features staple fiber, and first hands are sold as far ahead as their books are open. Calls for acetate staple for use in combination with the viscose type are rapidly increasing. Spun rayons in the gray goods market are scarce. Volume of this business has increased to the point where it is over 30% of total rayon gray goods sold. Twills and serges and pigment taffetas lead the filament rayon line. Rayon and silk throwsters are advancing prices due to increased costs of labor and supplies.

Raw silk is now under a new form of Government control, and it is understood that the Japanese will soon tune their domestic consumption of raw silk to the condition of the American market, so that there will be material available for export in proportion to what the American silk market requires. This plan, it is believed, will aid in maintaining stabilization of price. Raw silk production in Japan has been set at 610,000 bales for this year, a decrease of 13% from a year ago. The New York price on Double Extra Cracks 78% on June 4 was $3.01.

Hosiery remained steady through May with full-fashioned goods unchanged but stronger; seamless somewhat higher in price. It is believed that further advances are in store for seamless goods which will affect particularly some of the lower-price brackets. Mill stocks of full-fashioned goods are

HERE'S THE BIG DIFFERENCE

BETWEEN

FRIGIDAIRE

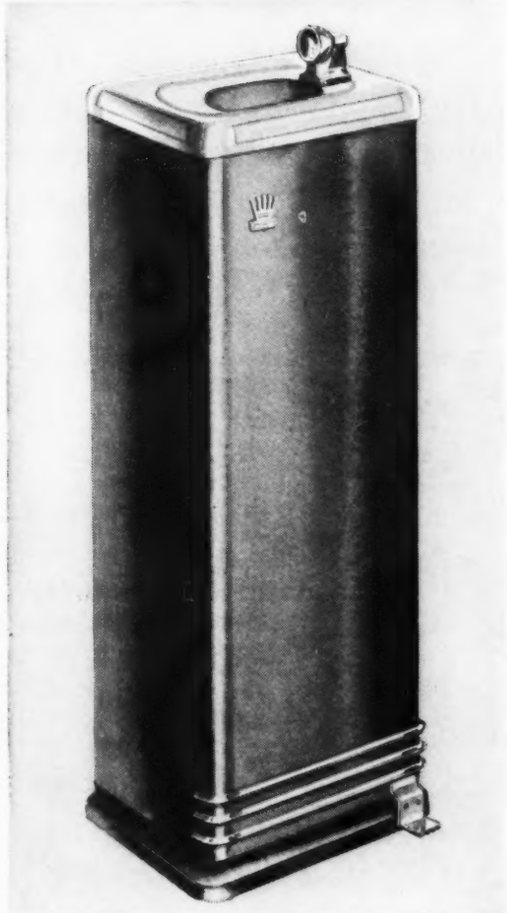
and Ordinary Water Coolers!

Famous Frigidaire Meter-Miser Eliminates Many Parts that Cause Wear and Expense!

Because new Frigidaire Water Coolers are powered by the efficient Frigidaire Meter-Miser mechanism, they offer unusual dependability and economy. For the Meter-Miser is the simplest refrigerating mechanism built. Its exclusive rotary design eliminates pistons, connecting rods, many other parts that cause friction and wear. Permanently sealed and oiled for life, it is protected for 5 years against service expense. There's nothing else like it!

Many Outstanding Features! In addition, Frigidaire Water Coolers are unusually compact, have stainless steel top . . . bonderized sides...pre-cooler for speedier cooling...new Magic Action bubbler...self-cleansing tank...finger-tip temperature control... attractive appearance . . . optional foot pedal at slight extra cost ...and many other advantages.

A Cooler for Every Need! Frigidaire offers a complete line of water coolers for every industrial and office requirement. Ask your nearest Frigidaire dealer to make a survey of your requirements. Or mail coupon below for free catalog.



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CAUTION! It isn't a genuine Frigidaire unless it bears the "Frigidaire" nameplate! Frigidaire products include: Water Coolers—Air Conditioners—Beverage Coolers—Refrigerating Equipment for all purposes.

Call in the Expert

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The Greatest Name in Refrigeration

Frigidaire Commercial and Air Conditioning Division
General Motors Sales Corporation, Dayton, Ohio.

☐ Please send me complete water cooling catalog!
☐ Please make a free survey of my water cooling requirements!

Name and Company .....

Address .....

City ..... *State* .....

(TW-6)

WATCH POWER COSTS

COME DOWN

WITH THE

RIHCO TYPE B ATOMIZER

"Cuts Power Cost in Half."

You'll be surprised at the way the Type B atomizer really eliminates the usual high cost for atomizer humidification. To be able to operate your humidifier system at half the ordinary cost is certainly being economical.

For atomizer humidification, the finest kind, it pays to insist on RIHCO because:

- **Air consumption has been cut in half.**
- **Humidifying capacity can be doubled on existing compressors.**
- **Power costs are far less.**

Let a Rihco engineer explain why so many mills now use the Type B—then get the facts for your mill.

R. I. HUMIDIFIER & VENT. CO.

Humidifiers since 1912.

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lower than a year ago, while mill stocks of seamless goods are somewhat higher.

Underwear mills are experiencing pressure for deliveries from wholesalers and retailers, and scarcity in some men's and boys' numbers is becoming apparent. Price advances on some lines were made early in May, averaging about 10%. Pegging of combed yarn prices below the recent top basis of that market has confused some underwear buyers, but first hands argue that they have never reflected the full advance in their underwear prices and consequently the price structure for knitted products remains unchanged.

Outerwear mills report no resistance to recent price advances of 8 to 10% on semi-staple and novelty men's and boy's sweaters. Reorders on fall are now coming in more actively. Women's staple sweaters promise well for fall. Price advances are forecast on knitted headwear and mufflers. Bathing suits near their climax for 1941.

This and That

Federal Trade Commission will hold a trade practice conference for the rayon and silk dyeing, printing and finishing industry on Thursday, June 26, at 10 a. m., in Washington.

Considerable quantity of English rayon staple fiber due to arrive in this country during June has been lost in transit, according to information cabled to American Viscose Corp.

Commission for selection of site for proposed textile training school in North Carolina met in Charlotte May 28. Legislature has voted $50,000 toward project.

National Consumer-Retailer Council has issued a manual entitled "Informative Labeling," prepared by Roger Wolcott, executive secretary of the Council.

Sears Roebuck & Co. in their mid-summer sales catalog give figures on fiber content of numerous items containing wool. This is in conformity with the labeling act which goes into effect July 14. A number of the descriptions, however, refer to "virgin" wool, which name is not provided for at all in the act, but which is permissive under the F.T.C. rule if applied to 100% items.

First rayon plant in Chile, located at Quillota and owned by Said & Sons, will begin operations early this month, it is said. Of its ten spinning machines, at first only two will be operated. Full capacity will not be reached until fall.

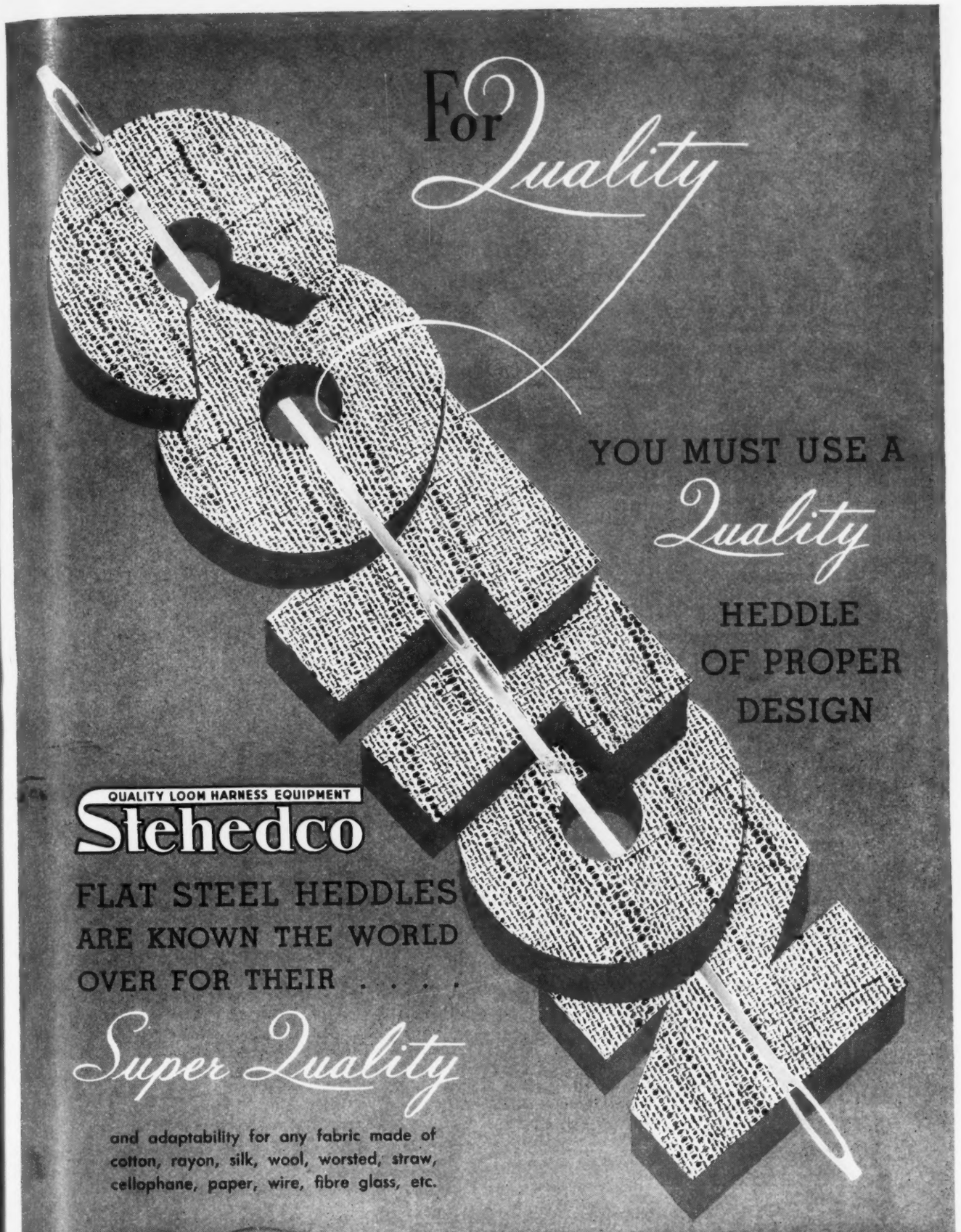
Tackle Twill, the fabric for football players and Army parachutists, is now employed as an all-weather utility jacket for golfers. It is treated for water repellency and used with the sleek side on the inside for easy taking on and off.

P. H. Hanes Knitting Co. is using a total of 876 newspapers in their spring 1941 advertising campaign on underwear for men and boys.

Harriet Elliott, consumer representative in the Office of Production Management, told the recent meeting of the United States Chamber of Commerce in Washington that it was the patriotic duty of American manufacturers to increase production of consumer goods to meet increasing demands and to maintain prices on a reasonable level.

"Fibrane" is the word transmitted from Vichy, France, to describe a new textile material about which the local fashion authorities were said to be enthusiastic.

Tariff Commission has, at request of Donald M. Nelson, director of purchases of OPM, instituted an investigation to determine the extent to which changes in costs of labor, supplies and provisions, shearing, transportation, and in other costs, for the 1941 clip as compared with the 1940 clip, have affected the cost of wool production in this country.



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Manufacturers of Superior

FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—
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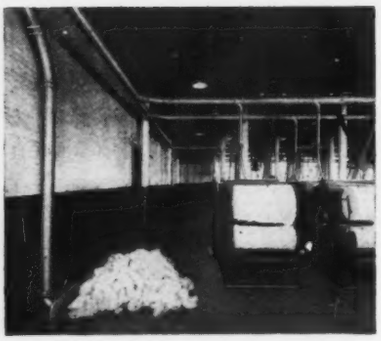
FIELD ENGINEERS
IN
EVERY DISTRICT

700 mills, both cotton and wool, find that



Showing cards equipped with Abington Vacuum Stripping. At left foreground is conveyor for flat strips.

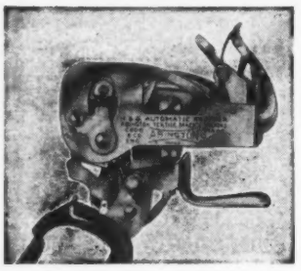
"Vacuum Card Stripping and Waste Collecting saves 60% to 90%."

The Abington Vacuum System strips cards at 60% to 90% savings, adding about 4% production on cotton, and often giving increases equal to an extra set of woolen cards. Many mills also utilize the System to collect process waste from cards, pickers, combers, etc., with great advantages in cost and cleanliness.

Using the Vacuum System to collect picker motes.

Used for floor sweeping, the Vacuum System is quick and thorough.

Try out Weaver's Knotter FREE in your mill.



Abington Knotters tie a non-slip, flat knot, very compact, always uniform in size and length of tails. Tails are automatically clipped any desired length from 5/16" or more down to less than 1/16". Send sample of your yarn and we will adjust knotter to fit.

REQUEST STRIPPER OR KNOTTER CATALOG

ABINGTON

ABINGTON TEXTILE MCHY. WKS., ABINGTON, MASS.

Card Strippers — Yarn Dyeing Systems — Weaver's Knotters

OFFICES AT BOSTON, MASS. • CHARLOTTE, N. C.

News on Textiles in Defense

Priority committee on textiles appointed by OPM

IN ADDITION to its imposition of a ceiling on combed yarn prices (treated on page 61), Washington made several other defense moves affecting textiles in the last four weeks.

Most interesting of these was the appointment by OPM's Division of Priorities of a Priority Committee on Textiles. Dr. H. S. Rogers, chairman of the General Products Group, is also chairman of the new textile committee, which includes Harry L. Bailey, president of Wellington, Sears & Co.; E. P. Cave, of Ely Walker Dry Goods Co. of St. Louis, who will represent the users of fabrics; and officers of the Army and Navy and other agencies. It is not believed that this committee will take any immediate action, but the possibility exists, or it would not have been appointed, officials said. So long as the textile Office of Production Management, headed by Frank Walton, can keep needs satisfied by diversions and substitutions, priorities will be avoided. Nevertheless reports were circulating that priorities might soon be put on cotton duck for defense contractors.

Another matter of interest is consideration by manufacturers of ply-yarn duck, at the request of OPM, of the possibilities of increasing their production capacity. Quartermaster officers confirmed opinion that additional output probably will be needed. But they said that the Army is not interested in financing any plant expansion; that no new textile plant has yet received Government assistance.

Donald M. Nelson, Director of Purchases for OPM, announced that in addition to procurement of cotton sheets previously announced by QM, negotiations for about 750,000 more sheets have been completed. He said the Army would not be in the market for any more sheets for six months.

Late in May, manufacturers were asked to submit bids on wool Army blankets for delivery in 30, 60, and 90 days. Asked what was the reason for this, the Quartermaster said 320,000 blankets were wanted for emergency, but declined to say what the emergency was.

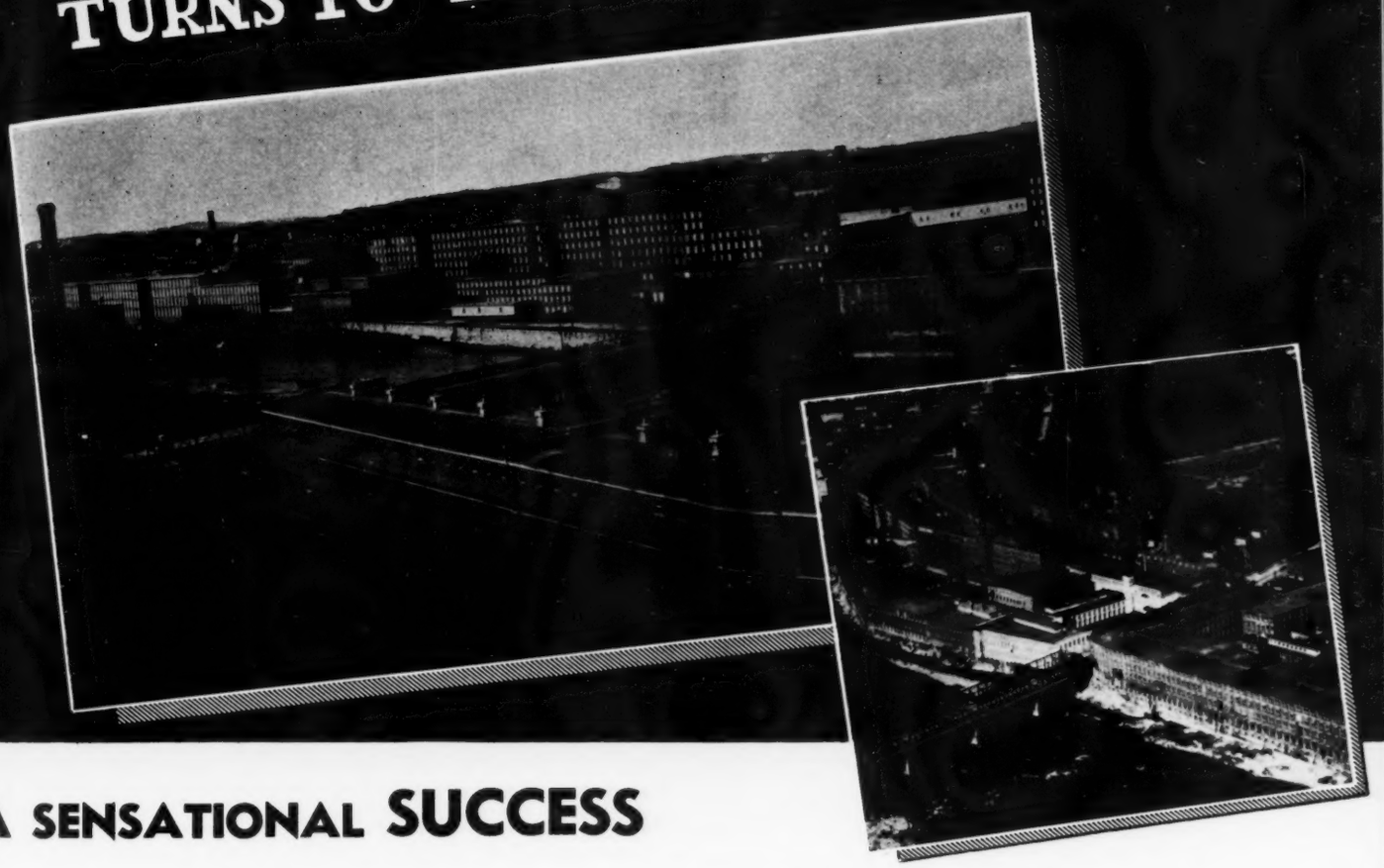
Officials connected with price administration, whose duty it is to watch all Federal purchases, say they believe the Army now has clothing and equippage for well over 2,000,000 men.

Officials are also looking into the relation between wool supply and requirements for the next fiscal year. Figures seem to indicate that domestic-grown raw material covers only about one half of the total amount needed for military and civilian use. There is talk of the Government taking over existing raw wool stocks and the new clip, but no immediate action is foreseen at present.

Harry L. Bailey, president of Wellington, Sears & Co., New York, who has been appointed to OPM's Priority Committee on Textiles. Mr. Bailey is a leading authority on the manufacturing and marketing of ducks and industrial fabrics

Looking for Space?

INDUSTRY TURNS TO AMOSKEAG



A SENSATIONAL SUCCESS

ONLY 2½ MILLION SQ. FT. OF PRODUCTIVE SPACE LEFT

A short while ago it was 8 MILLION . .

Yet you still have the opportunity of fitting units of this splendid manufacturing property to your exact needs. Units are available from 2500 to over a quarter million square feet. Units that will find your requirements for expansion, for decentralization, for new industry. Units that are available immediately on low sale or rental figures.

WHY AMOSKEAG?

Amoskeag Industries, Inc., is a corporation wholly owned by Manchester businessmen, who handle the property to build payrolls for the citizens of their community. Over 74 manufacturers and service organizations have already taken advantage of Amoskeag's favorable sale and rental prices.

AMOSKEAG *has Everything*

Here in Amoskeag are ceiling heights of every measurement, wide bays, plenty of light, air and sunshine. Buildings are of sturdy brick mill constructions, are on paved streets, many with railroad sidings. Iron fencing protects the entire property. Steam for manufacturing is available, as are low cost electricity and gas. Investigate Amoskeag Now!

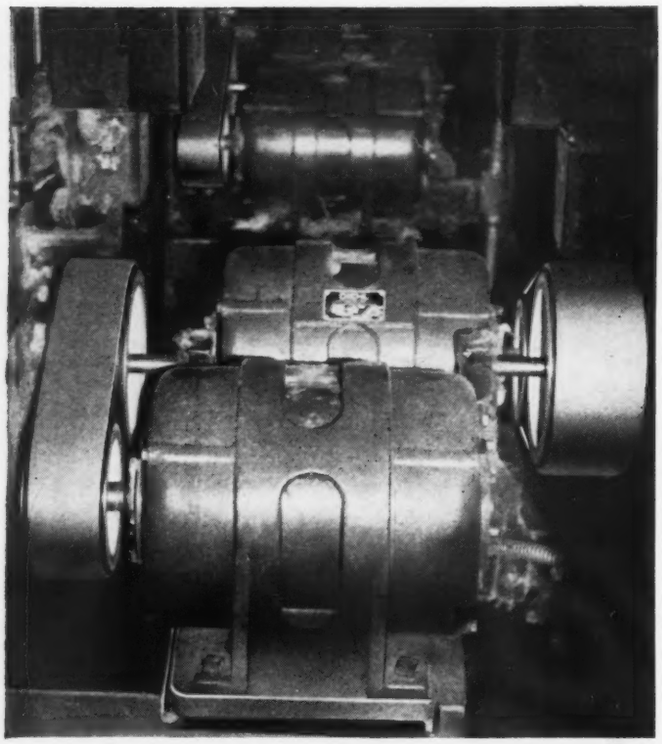
NEAR EVERYWHERE

Boston is but 55 miles, New York—248. Direct train connections to New York and Canadian points, with overnight service to New York, Philadelphia, Montreal, etc. See Amoskeag first!

AMOSKEAG INDUSTRIES INC.

MANCHESTER, N.H.

. . . so they ordered **84** more!



IN January, 1940, a well known Georgia mill set up 24 new spinning frames . . . installed 24 Rhoads TANNATE-ROCKWOOD units to drive them.

The following September 84 *additional TANNATE-ROCKWOOD* drives were ordered because of the production increase and trouble-free drive performance of the original 24!

Says the management—all future drives will be Rhoads TANNATE-ROCKWOOD.

It's probable that TANNATE-ROCKWOOD can step up your production, too . . . and decrease your costs. Machines are kept at the right speed automatically . . . insuring higher hourly production, more uniform work, less spoilage, reduced unit cost—*and more profits!*

CUT BELT COSTS and STEP UP PRODUCTION WITH

RHOADS

Founded 1702

Tannate-Rockwood

the ideal

SHORT CENTER DRIVE

J. E. RHOADS & SONS · 35 N. SIXTH ST., PHILA., PA.

NEW YORK · CHICAGO · ATLANTA · CLEVELAND

Labeling Rules Are Set

F.T.C. issues its supplement to wool products act with scant change

RULES AND REGULATIONS under the Wool Products Labeling Act were finally issued by the Federal Trade Commission on May 24. They show relatively small changes from the tentative rules issued on March 15. Any person subject to the act may receive a copy of the rules by applying to the Federal Trade Commission in Washington, D. C.

Trade criticism of the rules varies with the kind of business in which the criticizer happens to be. For the retail trade, omission of ruling on carried-over stocks on retailers' shelves July 15, the effective date of the rules, leaves an unsolvable dilemma. It is understood that certain retail organizations may bring this matter again to the attention of F.T.C. It is obvious that on a certain proportion of the stocks, the necessary information may be gathered and the materials labeled in accordance with law. Upon another proportion of the stocks this will not be possible, and it is any man's guess as to how the material should be labeled. F.T.C. says that the interstate commerce provision of the act is the key to the solution.

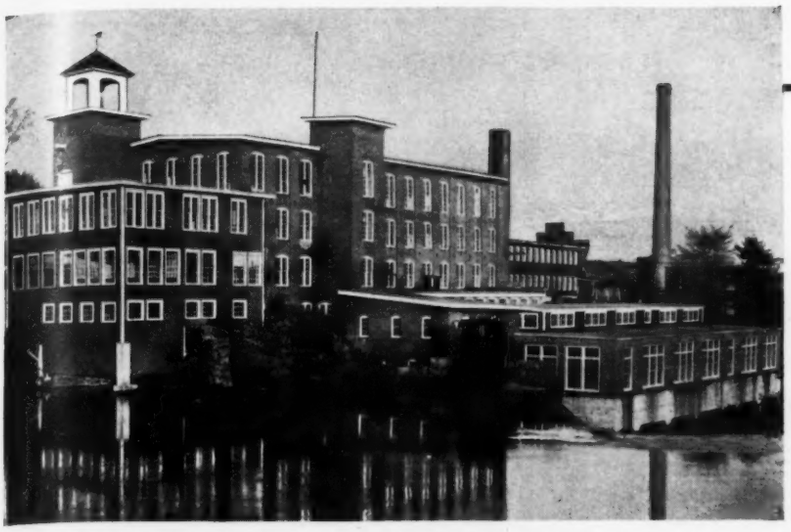
Another evident omission affects goods intended for the Government, notably Army equipment. There is no rule exempting these from labeling, although it had been strongly argued, and it was believed sympathetically received, that these materials being bought on strict specification, being accepted by Government agencies and not being in commerce for the ultimate consumer as customarily conceived, might be exempted.

A further omission appears to some to be absence of procedure for establishing violation of the act. The question "How shall wool manufacturers compute the mixture in their cloth, whether by what is put into the initial blend, or what is presumably in the finished fabric?" was left unanswered.

Several of the proposed rules which were strongly opposed by manufacturers as working a hardship and not being expressly provided in the act itself, are part of the final rules. These include such matters as the disclosure of specialty blends involving vicuna, camel hair and such fibers, and the ruling that only fibers present in any particular blend may be named upon the label—which latter ruling complicates the number of tickets and labels necessary to carry out the provisions of the law.

The principal change noted in the trade is the new provision that the manufacturer's name need not appear upon the label providing a number assigned to him by F.T.C. be used thereon. However, the name of the wholesaler or retailer must appear upon such a label, and snoopers can doubtless find out the identity of the numbers.

Although it has been generally considered that the act is to go into effect on July 14, the rules and regulations issued by F.T.C. are described as to be "formally promulgated by the Commission and become effective on July 15, 1941." The act was passed on Oct. 14, 1940, to be effective nine months from that date; 152 days or more than a half of the allotted time passed before F.T.C. on March 15 issued its tentative rules. Eighteen days later, on April 2, the public hearing was held, and 52 days later on May 24, the final form of the rules was issued. The effective date of the rules, July 15, is 52 days from the date of their issuance. The trade has thus only two months, less 10 days, in which to prepare to conform to the law and its accompanying rules. Already, in good faith, mills have set up plans of procedure which they believed met the requirements of the act, but now in a number of cases it is apparent that these procedures do not meet requirements of the F.T.C.



THIS VACANT PLANT is in Southern Maine—15 miles from Portland harbor facilities. 24-hour freight to New York. Trucking service to principal Eastern markets.

LOCATED in a fine little Maine village 50 miles from Portland, this modern plant is within easy reach of Boston, New York and all important Eastern markets.

THIS BRICK FACTORY is in excellent repair. Surrounded by friendly, intelligent labor and with plentiful processing water. It is 101 miles from Portland Harbor facilities—and overnight from principal Eastern markets.

MAINE ENCOURAGES INDUSTRY!

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The friendly State of Maine is the ideal place for the location of industry. Here there is no State income tax, no sales tax, no machinery tax, no corporation tax. There is an ample supply of friendly, intelligent labor and abundant economical power. Look over these splendid opportunities. If you are moving, expanding or decentralizing—consider the advantages offered by the State of Maine!

For complete information about all available plants and sites, address the

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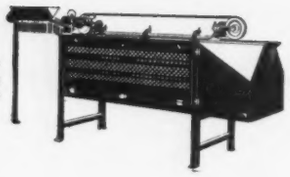
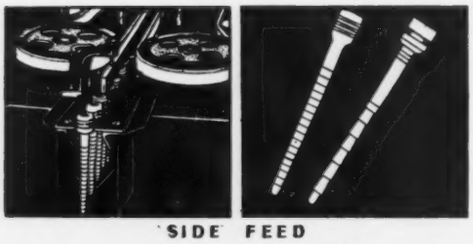


Cleans

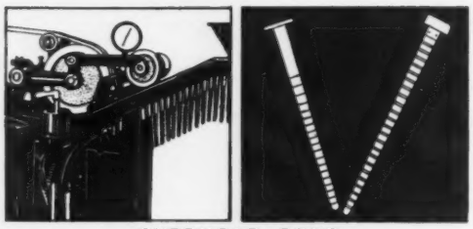
ALL TYPES OF BOBBINS Safely and Efficiently

Because of its versatility, the NEW TYPE L Loom Bobbin Stripper is adaptable to your cleaning requirements. Examine the three feeding mechanisms shown below—each feed has already proven its efficiency and economy in nationally known mills.



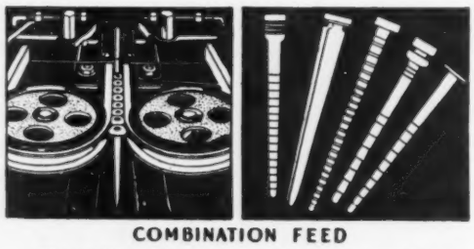
SIDE FEED

Used principally on Automatic Loom Bobbins of the general type shown above



OVERHEAD FEED

For paper and single-head Quills with head variation of not more than 5/8"



COMBINATION FEED

Cleans wide variety—only minor adjustments, requiring about 30 seconds, are necessary to change from one bobbin to another.

It will pay you to investigate this mill proved method of cleaning—it's BETTER—FASTER—CHEAPER.

The **Terrell Machine Co.,** *Inc.*

CHARLOTTE, N. C.

Luther Pilling, Danielson, Conn.—N. E. & Canada
E. W. S. Jasper, Elizabeth, N. J.—Penn. & N. J.
Geo. Thomas & Co., Ltd.—Manchester, England

Nylon Seamless Hosiery

Makes debut for women just one year after full-fashioned

WOMEN'S SEAMLESS Nylon hosiery made its debut in New York department stores on May 15, just one year after full-fashioned Nylon stockings were put on sale at retail. The new seamless hosiery, knit on fine-gage circular machines, such as 340 and 370-needle, from 30- and 40-den. Nylon, is extremely sheer. It is featured by some stores as giving the wearer a barelegged appearance. Du Pont plays down the barelegged idea; prefers that all brands be called by the generic term "No-Seam." Retail prices range from $1.15 to $1.50 a pair; generally were $1.35. Wholesale prices were as high as $9.75 a dozen; supply was limited even at this price, because of small supply of Nylon yarn available to seamless hosiery mills and small number of fine-gage machines suitable for making the extremely sheer stockings. At present five companies are producing the new hosiery—Harriman Hosiery Mills, Hanes Hosiery Mills, Concord Knitting Co., Fisher Hosiery Co., and Bear Brand Hosiery Co.

Little fanfare preceded first retail sales. Yet use of Nylon for knitting of seamless hosiery may well have a more profound effect on the hosiery industry than that due to its substitution for silk in full-fashioned hosiery. Chief objection which women have to seamless hosiery is that the stockings do not fit properly, especially after washing. Main advantage of seamless hosiery is that it is cheaper, due to lower knitting costs. Preboarding of Nylon seamless hosiery, thereby permanently setting the shape of the stockings, is believed to overcome the previous major drawback. Constructions of stockings have been modified to give necessary stretchability of welt, proper fit of foot. With major objections to seamless hosiery eliminated, further improvements are expected.

Ultimately it may be possible to produce seamless stockings which will rival full-fashioned hosiery in fit and appearance. Consumer reaction to small quantities of No-Seam Nylon hosiery initially available is eagerly awaited by Nylon producer and the hosiery industry.

Scourolan - The Dyer's Best Friend

Photo by Philip Gendreau, N. Y.

AS a companion and protector for his loved ones the dyer may depend on his dog, but during working hours he looks to SCOUROLAN. This detergent, used with soap, makes goods absolutely clean and lustrous, ready for perfect piece dyeing; no streaks, no cloudiness, no gumminess, no odors.

If it's yarn dyed or stock dyed goods, he doesn't worry about bleeding, for Scourolan can be used in a cold bath if necessary without loss of efficiency. Scourolan is a friendly detergent. Let our service man demonstrate this fact in your mill.

COMPANION PRODUCTS

FULLITIN.....*fulls and scours COLD*
EBCOMULSION.....*for perfect handle*
SOL-TAR.....*for removing tar spots*

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It's the Finish that Counts

Remove Starches

by gentle, natural action

DESIZE WITH EXSIZE

Don't risk harsh chemicals! Nothing in Exsize can tender your sheerest fabric. For Exsize contains enzymes that remove starches by gentle, *natural* action. It ideally prepares fabrics for better bleaching, dyeing and sanforizing. Works quickly, thoroughly, economically.

PABST BREWERIES

Our laboratory facilities and practical field men are available to help you with desizing problems.

PABST SALES COMPANY
CHICAGO, ILLINOIS
Warehouses at New York, and Textile Warehouse Co., Greenville, S. C.

Viscose Stock Offering

Courtauld subsidiary now American owned; figures on earnings and sales

A NATION-WIDE underwriting group of 152 investment firms, headed by Morgan Stanley & Co., Inc., and Dillon, Read & Co., sold out on May 26, day of the offering, the 228,480 shares of 5% cumulative preferred stock and 1,568,000 shares of common stock of American Viscose Corp. previously registered with SEC. The issue price of the preferred stock was $107.50, plus accrued dividend from May 1, and of the common stock, $24. On May 21 a dividend of $1.25 had been declared on the preferred and a dividend of 50c on the common, both payable Aug. 1 to stockholders of record July 15. At that time the directors stated a policy of paying dividends which are a reasonable proportion of the company's earnings consistent with maintaining a strong working capital position.

With this offering, American investors acquired ownership of the largest producer of rayon in the United States. The corporation was formerly an American subsidiary of Courtaulds, Ltd., a British company. Last March, a group of 17 investment banking firms purchased from the British Treasury about 91% of the stock of the corporation. As a result of recapitalization the new capital structure of the corporation consists of 251,940 authorized shares of 5% preferred (250,693 shares outstanding), and 2,000,000 authorized shares of common (1,720,442 shares outstanding). The corporation has no funded debt.

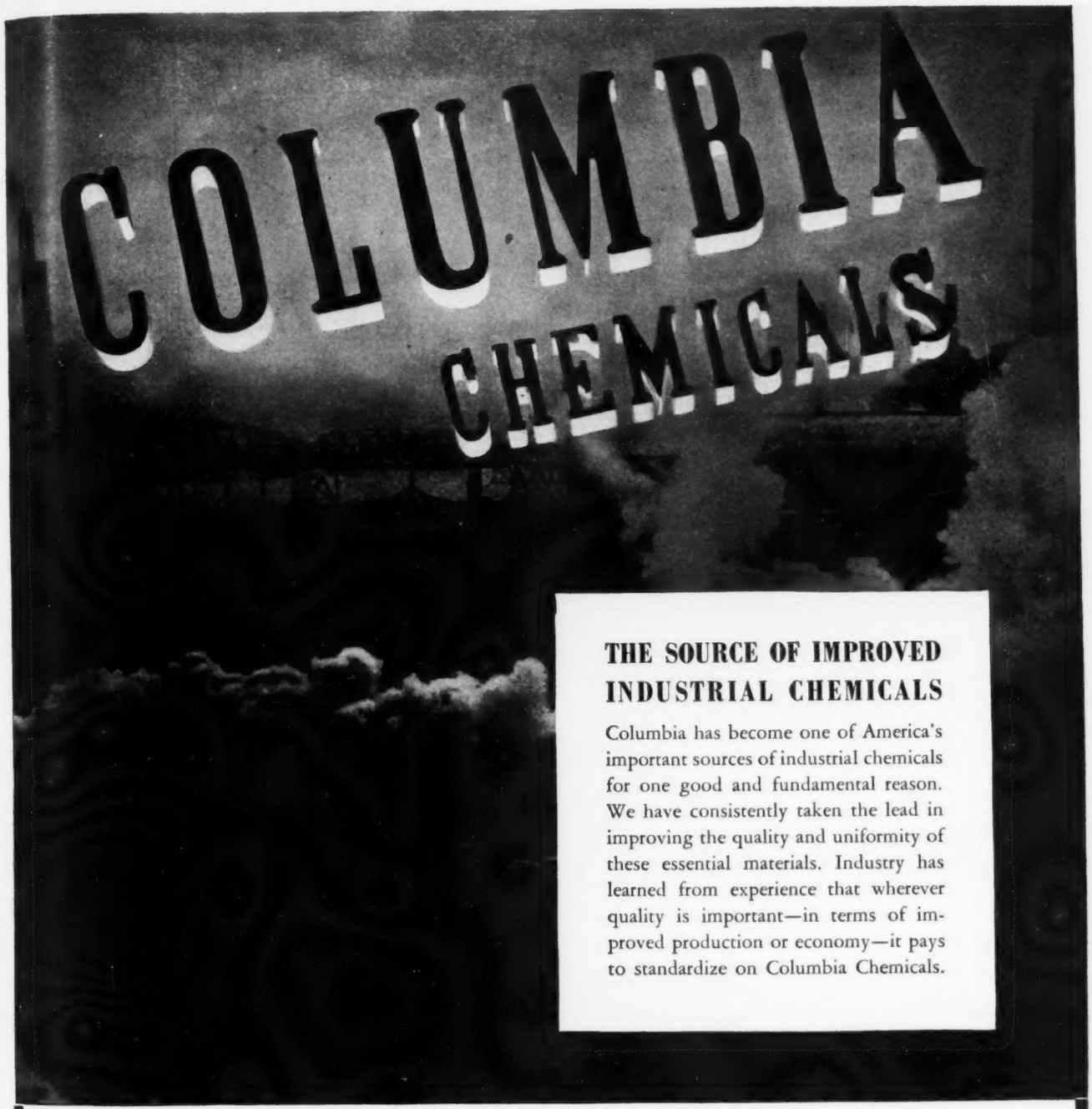
The original purchase from the British Treasury involved an aggregate of 448,000 shares of capital stock which upon the recapitalization became 228,480 shares of preferred and 1,568,000 shares of common. Courtaulds, Ltd., which retained about 5% of the corporation's capital stock, now holds 12,446 shares of preferred and 85,417 shares of common. About 4% of the preferred and common are held by eleven other stockholders and 1,246 preferred shares and 8,557 common shares are held in the corporation's treasury. From the offering it is estimated that the British Treasury will receive a total of $54,348,923.

According to the prospectus, the corporation in 1940 and in the first three months of 1941 shipped about 30% of the total domestic shipments of viscose yarns, more than 12% of the acetate, and 51% of total domestic and imported staple fiber.

The corporation's total assets, as shown by its March 31, 1941, balance sheet, were $121,537,953. Property, plant and equipment were carried at $66,467,758, after deducting reserves for depreciation and special reserves aggregating $67,371,527. Current assets amounted to $53,727,487, including $9,831,430 cash and $24,623,163 in marketable bonds. Current liabilities were $7,996,051. Total net worth was $113,541,901, including surplus reserves of $42,000,000, available for the $25,069,300 par value of preferred and the 1,720,442 shares of common, equivalent to about $51 a share on the common.

Earnings statements showed net profits after all charges, of $7,884,676 for 1940, $4,057,164 for 1939, $1,872,978 (loss) for 1938, $9,974,220 (profit) for 1937, and $8,943,977 for 1936. The 1940 earnings are equivalent, after dividend requirements on the new preferred, to $3.85 per share on the common outstanding. For 3 months ended March 31, 1941, net profit amounted to $1,913,772, after all charges including increased reserves for taxes; this figure compares with $2,067,414 for the first quarter of 1940.

Net sales for 1940 were $62,771,895, for 1939 $54,261,387, for 1938 $42,074,969, for 1937 $53,269,371, for 1936 $58,269,371.



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Columbia has become one of America's important sources of industrial chemicals for one good and fundamental reason. We have consistently taken the lead in improving the quality and uniformity of these essential materials. Industry has learned from experience that wherever quality is important—in terms of improved production or economy—it pays to standardize on Columbia Chemicals.

ESSENTIAL INDUSTRIAL CHEMICALS	SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • LIQUID CHLORINE
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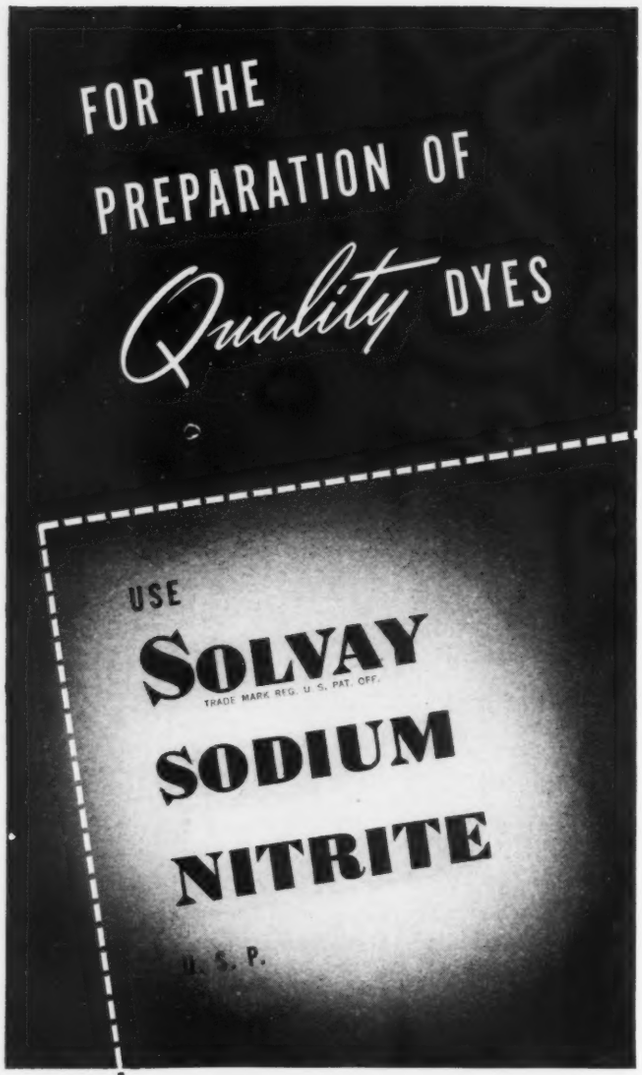

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NEWS ABOUT MEN

Henry C. Alexander, vice-president of J. P. Morgan & Co., New York, was elected to the board of directors of American Viscose Corp., Wilmington, Del., at a special meeting early last month. Also elected at the same time are the following: **James M. Barker,** a director of Sears, Roebuck & Co.; **William Ewing,** executive vice-president of Morgan, Stanley & Co., Inc.; **Richard R. Dupree,** president of Procter & Gamble Co.; **Thomas B. McCabe,** president of Scott Paper Co.; **Charles F. McCain,** president of Dillon, Read & Co.; and **Edward L. Shea,** president of the North American Co.

Samuel Fisher, formerly president of the Westmont (N. J.) Silk Hosiery Mills, has sold his interest in the mill and is no longer connected with it.

Kenneth Kendal and **Frank Howard,** both veterans of the men's wear market, have been appointed to handle the men's wear department lately established by A. D. Julliard & Co., New York.

Otto Hinck, who recently completed 40 years in the textile export business in New York, was given a luncheon under the auspices of the Textile Square Club, last month, which was attended by a large representation of the Worth Street district.

N. C. Williamson of New Orleans, La., was recently re-elected president of the American Cotton Cooperative Association. Other officers elected are: **W. W. Sanson,** vice-president and manager; **Kenneth C. Barranger,** counsel; **P. L. Sarrat,** secretary-treasurer; **F. Hurst,** assistant secretary-treasurer; and **E. C. Angelery,** assistant to the treasurer and manager of the New York office.

Elliott White Springs, president of Springs Cotton Mills, Lancaster and Fort Mill, S. C., and World War aviation ace, has been appointed civilian defense director for the Fifth Congressional District of South Carolina by Governor Maybank.

Nathaniel C. Thayer has joined Burlington Mills Corp., Greensboro, N. C. to engage in promotional work. Until he retired recently he had been for nine years advertising manager of the Acetate Division of E. I. du Pont de Nemours & Co.

James H. Porter, vice-chairman of Bibb Mfg. Co., Macon, Ga., has made a gift of $17,000 to the Mulberry Street Methodist Church, Macon. His latest gift brings the total sum he has contributed to the church to about $84,000.

Ben J. Williams, New Orleans, was elected president of American Cotton Shippers Association at annual convention in Memphis, Tenn., recently. He succeeds **J. Robert Lindsay,** Greenville, S. C. **R. C. Dickerson** was made secretary and general manager.

J. Douglas Woods, has been elected president of the York Knitting Mills, Ltd., Toronto, Canada, to succeed his father the late Sir James Woods.

Coy C. Humphrey, assistant sales manager of Munsingwear, Inc., Minneapolis, Minn., has been named general sales manager succeeding **E. C. Wilson.** Mr. Wilson will continue as vice-president and director of sales and merchandising.

Aaron B. Cutting, New York, is chairman of the Fifth Annual Hosiery Trade Golf Outing held June 15 at the Knoll Country Club, Boonton, N. J.

James W. Dunnaway, vice-president and general sales manager of Charles B. Cochrane Co., New York, has been elected president of the Carpet Trade Golf Association. The annual tournament will be held at Princeton, N. J., July 24 and 25.

A. C. Stohn, president of Carl Stohn, Inc., Taunton, Mass., was elected president of Phi Psi, national textile fraternity, at its 38th annual convention, held May 16-18 at Providence. Other officers elected were: vice-president, **John Killheffer,** E. I. du Pont de Nemours & Co., Inc., Charlotte, N. C.; treasurer, **Mortimer T. Farley,** Farley-Harvey Co., Boston. **Donald Crawford,** Crawford Printing Co., Philadelphia, was re-elected secretary.

Dr. H. Mark, Polytechnic Institute of Brooklyn, spoke at the June meeting of American Association of Textile Technologists, on "Fine Structure and Properties of Cellulose Fibers."

Luther H. Hodges, general manager of the manufacturing division, Marshall Field & Co., New York, spoke recently to the student body of Philadelphia (Pa.) Textile School.

HERE'S HOW I SAVED $5,600.00 A YEAR ON OUR PRINT WASHING!

Our print washing costs were high and I was looking around for some way to get them down. So, when the Colgate-Palmolive-Peet man came in and started to talk about saving money, I was interested.

We checked our process together, and he certainly knew his business. He suggested some changes that made sense to me, and I agreed to a test run. He stayed right here in the plant and worked along with us.

The test was so successful that I made the changes standard practice. Now, after a year, I've found the changes suggested by the C.P.P. man have cut our costs by 20%. And that represents a saving of $5,600.00 a year on our print washing operations alone!

MAYBE THE C.P.P. MAN CAN SAVE MONEY FOR YOU, TOO!

THIS is only one of the many actual cases in our files in which the free Colgate - Palmolive - Peet Consulting Service has saved money for textile manufacturers.

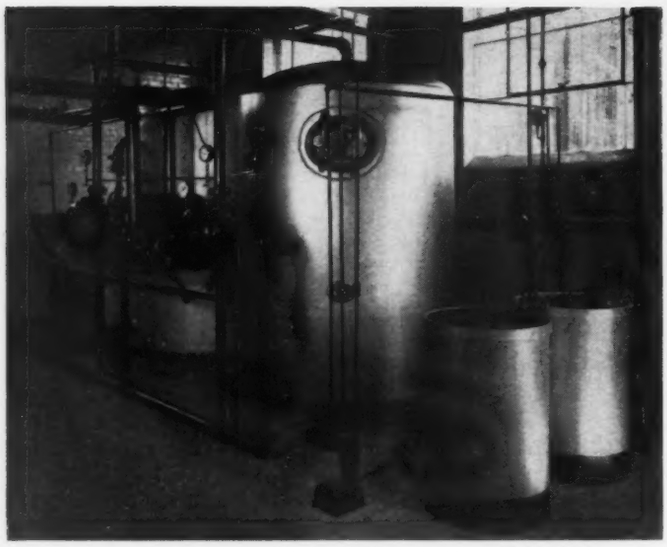
Give this service an opportunity to recommend the *right* detergents and wetting-out agents to fit *your* processing requirements. A talk with the C. P. P. Technical Man places you under no obligation whatever—yet it may open the way to substantial savings for you!

WRITE TODAY!

A request, on your company letterhead, will bring the FREE help of an expert from the C.P.P. Consulting Service. Write today!

COLGATE-PALMOLIVE-PEET CO.

INDUSTRIAL DEPT. JERSEY CITY, N.J.



INVERSAND WATER SOFTENING PLANT AT GENEVA MILL OF THE WANSKUCK COMPANY, PROVIDENCE, R. I.

Another Contributor to New England's Textile "Rejuvenation" . . . . . .

New England's phenomenal upswing as a major factor in textiles is due principally to aggressive management. But modern equipment, too, is playing a big part . . . Shown above is just one of the many mills and finishing plants that furnish their customers with top quality yarns and fabric through the use of pure water scientifically treated with

HUNGERFORD & TERRY WATER PURIFICATION SYSTEMS

Textile mills working with this carefully prepared yarn use volumes more water for processing their products than is required by the yarn makers, yet many of the latter forfeit quality and profits by failing to treat their finished products with water of equal purity and softness.

Whiter whites, brighter colors, better fabric and the elimination of spoilage caused by poor water are assured when your mill is equipped with a Hungerford & Terry Water Purification System. . . . Glad to make a survey and estimate that involve no fee, no obligation whatever. Write us.

HUNGERFORD & TERRY, INC.

WATER PURIFICATION PLANTS DESIGNED
INSTALLED *and* GUARANTEED

CLAYTON, NEW JERSEY

New England Representative, H. R. Myers
246 Walnut St., Newtonville, Mass.

NEWLY ELECTED VICE-PRESIDENTS of Industrial Rayon Corp., Cleveland, Ohio. At left—Charles W. Carvin, who has been sales manager of the yarn division since May, 1937, with offices in New York, is a native of Philadelphia and came to the company from Clifton Yarn Mills, Inc., Clifton Heights, Pa. At right, Moe P. Epstein, who has been merchandise manager of Industrial since he joined the company in September, 1937. A native New Yorker, he was previously associated with S. Slater & Sons, Inc. and their selling agents, J. P. Stevens & Co., in various executive positions.

Samuel Cabot, president of Samuel Cabot, Inc., and **Charles G. Bancroft,** vice-president of United Shoe Machinery Co., have been elected directors of Pacific Mills, Boston, Mass., to succeed **Henry G. Simonds** and **Henry G. Nichols,** resigned.

W. P. Hamrick has retired as general manager of the Hampton Division of Pacific Mills, Columbia, S. C., but will continue his connection in an advisory capacity, according to announcement by **C. B. Hayes,** recently elected vice-president in charge of southern manufacturing. Mr. Hamrick has been with Pacific since 1900. He is president of the Columbia Chamber of Commerce.

John Cowling has resigned as president of Louis Roessel & Co., Ltd., Drummondville, Que., Canada.

S. B. Perkins is the newly-elected president of Dallas, (Tex.) Cotton Mills.

Martin Sandler, former vice-president of Clifton Yarn Mills, Inc., Clifton Heights, Pa., is now chief of the Purchase Section of the Philadelphia Ordnance District, U. S. Army, with offices in the Mitten Bldg., Philadelphia. Mr. Sandler sold his interest in Clifton Yarn Mills late in 1940 when the silk sewing thread division of the company was purchased by Belding-Heminway-Corticelli, Inc., New York.

Robert L. Stowe, Jr., Belmont, N. C., was recently elected assistant secretary and treasurer of Chronicle Mills and National Yarn Mills, Belmont, N. C. He assumes these new duties in addition to being assistant secretary and treasurer of Stowe Spinning Co. and Imperial Yarn Mills.

Dean Thomas Nelson, head of the Textile School of the N. C. State College, Raleigh, N. C., celebrated a double anniversary recently when he celebrated both his birthday and his 40th anniversary with State College at a reception following the Textile School's Annual Fashion Show. Dean Nelson was educated and trained at the Preston Technical School in England and before coming to America worked in fancy fabric mills in England. He later spent one year as an instructor at Lowell (Mass.) Textile School, and in 1901 became an instructor at N. C. State College. He was made head of the Textile School there in 1906.

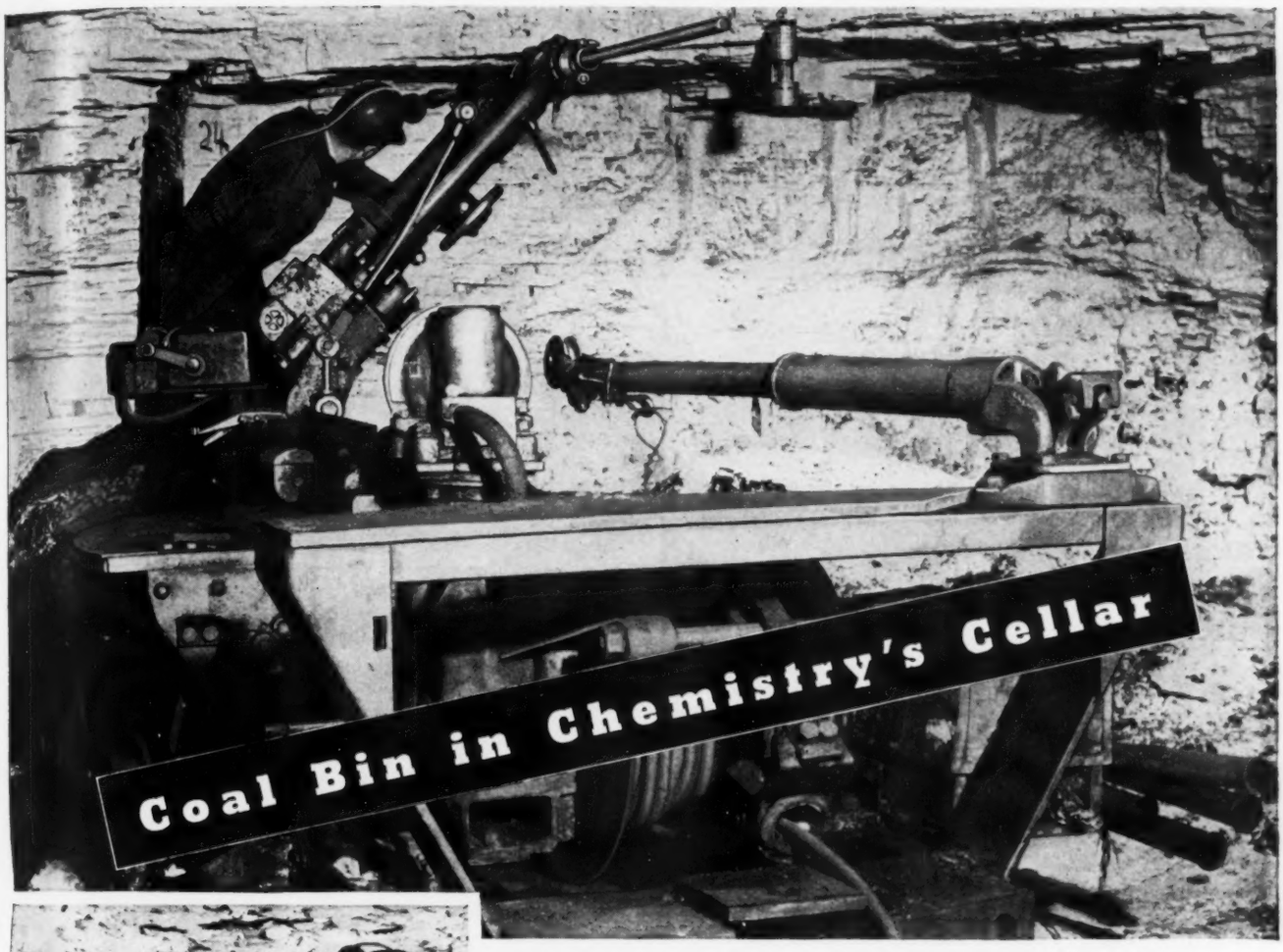
H. M. Craig, secretary and treasurer of Lola Mills, Stanley, N. C., has been elected mayor of that city.

Britt M. Armfield, who holds an executive position with the Burlington Mills Corp., Greensboro, N. C., has been elected a director of the corporation.

Harry E. Pate, former superintendent of Taber Mills, New Bedford, Mass., is now associated with George Carter Co., New York, as a cloth broker.

Frank H. Hillery has been reelected president of the Textile Export Association of the United States. **W. Ray Bell** was reelected treasurer and **Lionel P. Adams,** secretary.

E. M. Henning, assistant to the late C. W. Gaddy, superintendent of the Wiscasset Hosiery Mills, Albemarle, N. C., has been named to succeed Mr. Gaddy as superintendent.



Coal Bin in Chemistry's Cellar

Drilling in the Ford Collieries, in Allegheny County, Pennsylvania, which supply Michigan Alkali Company with a portion of its coal.

Shotfirer, assisted by loader, stemming shot hole in which powder and electric detonator have been placed.

BASIC chemicals are the foundation stones of the entire chemical industry and many other industries besides. Their manufacture is important. For upon the skill and integrity with which they are manufactured depends the quality of the finished products they help to form.

Coal is a vital material in the conversion of salt and limestone into alkalies, and the nation's collieries provide never-ending tons of bituminous which contribute constantly to the steady flow of high-grade basic chemicals from the Michigan Alkali plants at Wyandotte.

For more than fifty years, Michigan Alkali has maintained an uninterrupted production of the chemical materials you need . . . in quantities to meet your production schedules . . . and of the quality that will help guard your reputation and satisfy YOUR customers.

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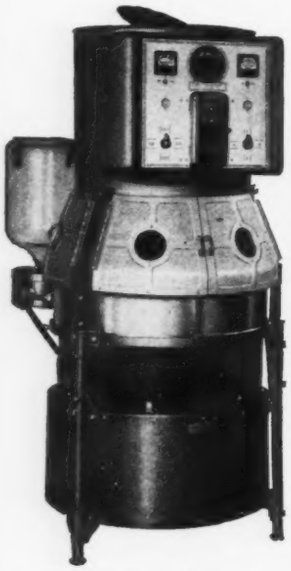
SPLIT BUSINESS PERSONALITIES



FDA-R Fade-Ometer

Modern business management operates in a fiduciary capacity. This is so well accepted it seems odd that any officer in the past, who would not have expected stockholder support if he had not done a good job, entertained the illusion the consuming public would give its support regardless of the treatment it received.

Today, it's the "public be pleased!" An army of technical experts constantly endeavor to improve quality, lower costs, maintain uniformity. To this steadily improving standard of living, Atlas Ometers play an important, if not spectacular, part. Guarantees of washability, and light fastness are meaningful if predicated upon satisfactory tests in the Launder-Ometer and Fade-Ometer. Literature gladly sent without the slightest obligation.

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MASSACHUSETTS CO., INC. 1894

ACCIDENT POLICY PAYS		HEALTH POLICY PAYS	
ACCIDENTAL DEATH	WEEKLY DISABILITY	$25.00 Per Week for Confining Sickness	$10.00 Per Week for Non-confining Sickness
$5,000- $10,000	$25.00- $50.00		
Estimated Annual Cost $15.00		Estimated Annual Cost $20.00	

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PAYS FROM THE FIRST DAY OF DISABILITY
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Eastern Commercial Travelers
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Without application please send complete information and application for membership to

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T.W.'41

NEWS ABOUT MEN

W. P. Fickett has been re-elected president of the Textile Fabrics association, New York, and **Edwin D. Berliner,** of Edwin D. Berliner & Co., has been named chairman of the board.

Percy T. Cuthbert and **Walter Tuthill,** veteran New York hosiery men, were tendered a dinner on May 19 to mark the beginning of their 50th year in the hosiery business. They began together as office boys for the old firm of Thomas S. Fuller & Co. in May 1892. Mr. Cuthbert is now president of P. T. Cuthbert Co., which he formed in 1932 after serving for several years as head of Charles Chipman Sons Co. Mr. Tuthill is vice-president of James Jamison Co., which is a successor of the old Fuller firm.

A. C. Hodges, Rosemary, Inc., New York, celebrated the 50th anniversary of his connection with that firm and its predecessors on May 13. During most of this time he has been on the selling end of the business.

John A. Foster, instructor of engineering at New Bedford (Mass.) Textile School, has been elected president of the Supreme Council of Delta Kappa Phi, national textile fraternity. The 20th annual convention of the fraternity was held recently in New Bedford.

R. T. Graham has been appointed general sales manager of the New York office of Marshall Field & Co. He has been with the firm for many years, recently serving as credit manager following the transfer of the manufacturing division in New York.

Edward Cross, for many years head of the costing department of the American Woolen Co., New York, and identified with that organization for 40 years, resigned May 20 to retire to private life. He is succeeded by **Raymond Veitch.**

E. W. Poole, formerly with Rock Hill (S. C.) Printing & Finishing Co., has become bookkeeper for Borden Mills, Kingsport, Tenn.

W. B. Chapin for the last ten years with Pepperell Mfg. Co., has been appointed assistant manager of the piece-dye department of Federated Textiles, Inc., New York. **Robert A. Coburn,** also previously with Pepperell, has become associated with Federated's sales organization.

June Dickson, 21-year-old senior in the Textile School of N. C. State College, Raleigh, N. C., will go into the designing department of a Burlington, N. C., textile mill after her graduation. She won a place on the honor list read at the recent Scholarship Day exercises. She is the first girl ever taken into membership by the N. C. State chapter of Sigma Tau Sigma, honorary textile fraternity. One of the few girls ever enrolled in textiles at N. C. State, Miss Dickson is probably the first to leave college and seek a permanent career in the textile field. She will graduate in weaving and designing and will start her work in cloth-designing a week after getting her bachelor's degree.

June Dickson, who is graduated from the Textile School of N. C. State College this month, at a roving frame in the school

William Parker, of Riverside & Dan River Cotton Mills, Danville, Va., has been transferred from the mill to the New York office where he will assist **James Grimes** in the styling and selling of shirtings and sportswear.

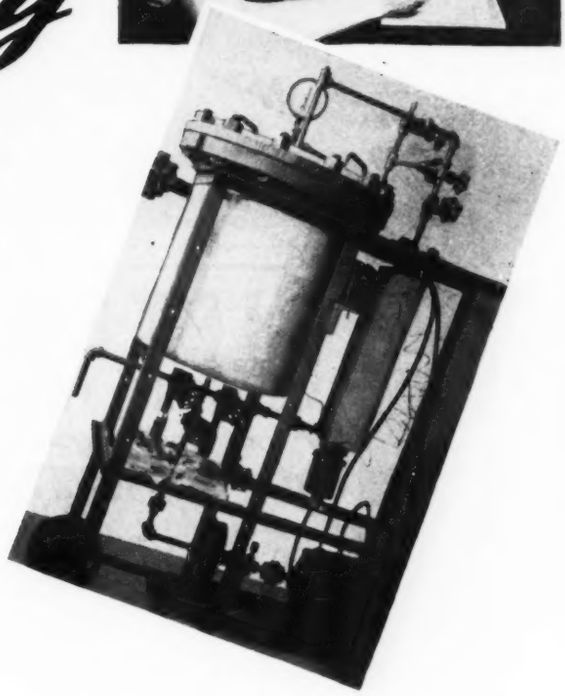
Albert B. Tansill, recently with Deering, Milliken & Co., has joined Chicopee Sales Corp., as representative in the southern area with headquarters at Atlanta, Ga.

Edwin W. Adams, plant superintendent of Lewiston (Maine) Division of Pepperell Mfg. Co., has been promoted to the office of assistant general manager and **William T. Lawlor,** lately in charge of detail work for Pepperell accounts, has been made assistant to Mr. Adams. **J. Arthur Cloutier,** office manager and purchasing agent, has been named superintendent of the sheeting department.

George Howell, purchasing agent of Rock Hill (S. C.)

STANDARD SILICATE Kier-Boiling SERVICE

Our Laboratory Can Help You



To

- ✓ **Make your Kier-Boiling formula most effective**
- ✓ **Improve the whiteness of your fabrics**
- ✓ **Assure minimum tensile strength loss**
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We invite you to bring your problem to Standard —to make full use of this scientific method of developing the most effective procedure for your particular needs.

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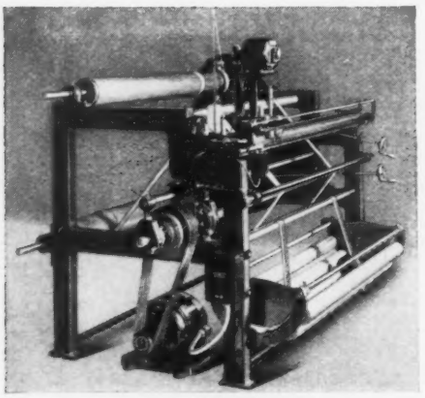
Plants at CINCINNATI · JERSEY CITY · LOCKPORT, N. Y. · MARSEILLES, ILL.



for WINDING LARGER ROLLS OF RAYON

(Up to 38" Dia.)

DUPLEX SEWING AND WINDING MACHINE, a *new, heavy, high-production* machine for making up and supplying automatic Shear with large rolls of rayon—up to 38" diameter. This machine is very satisfactory where continual operation of the Shear is desired and a Scray is impractical because of the danger of wrinkles. Rolls of cloth are placed either in a cradle (see illustration)— or in sockets or on forks. While a roll of cloth is being built up on either winding roll, the large roll previously made on the other winding roll is being fed into the automatic Shear.

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Curtis & Marble MACHINE COMPANY
WORCESTER, MASSACHUSETTS
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DIETERT MOISTURE TELLER
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MOISTURE CONTROL

HERE's an inexpensive, practical moisture tester that accurately and rapidly determines moisture content. Assures tremendous savings in processing time, reductions of rejections and improvements of product quality. Has universal motor-driven fan mounted on cast aluminum frame. Sample pan is easily inserted or removed. Portable. Used by many of the largest textile plants.

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NEWS ABOUT MEN

Printing & Finishing Co. has recently been made supervisor of personnel and purchasing; **W. M. Hull,** assistant purchasing agent, will be purchasing agent; **J. L. Landauer,** personnel manager, will have charge of pound goods, sales, receiving of gray goods, all insurance except on personnel, and waste elimination; **Dave Colitz** will have supervision of the shipping department replacing Mr. Howell.

Ben G. Braswell is president of the new B. & C. Hosiery Mills, Dunn, N. C., which has begun operations with **Andy Carrigan,** formerly of Massachusetts, as plant superintendent.

Joseph H. Fitch, superintendent of the mechanical department of Arlington Mills, Lawrence, Mass., has resigned after 50 years of active service with the company. He is succeeded by **Alexander Campbell,** his assistant.

William T. Hogg, for more than 32 years master-mechanic of the Dan River division of Riverside & Dan River Cotton Mills, Danville, Va., retired May 31 "to relax and enjoy life." He presented his resignation to the management some months ago, but remained in service in order that his successor might have time to familiarize himself with the duties of the position.

Arthur Deal, manager of the Collinsville (Ala.) Hosiery Mill since its organization, resigned last week to accept the management of a similar mill at Benton, Ky.

Winter S. Reed has been appointed assistant credit manager of the Bigelow-Sanford Carpet Co., New York. He will have charge of the credit department at Cleveland, Ohio.

Glenn E. Penland has become safety director for Firestone Cotton Mills, Gastonia, N. C.

Bertrand Boissonnault, has been placed in charge of industrial relations of Dominion Textile Co. Ltd., Montreal, Que., Canada.

R. L. Reid of Lowell, N. C., has been elected treasurer of Harden Mfg. Co., succeeding **A. J. Corpening,** resigned.

J. E. Murphy, for the last five years personnel manager of Rockmart-Goodyear-Clearwater Mills, has been transferred to New Bedford, Mass., where he will be in charge of employment at the reopened plant of the company there. He will be succeeded at Rockmart by **W. E. Andrews,** who will have **John Anderson** as his assistant.

Harold J. Leydon, associated with the North Star Woolen Mills for the last 16 years has been appointed sales manager of eastern sales with headquarters in New York.

James Mair, formerly head of the Revere Knitting Mills, Riverside, N. J. and more recently associated with Dexdale Hosiery Mills, Penderlea, N. C., has been appointed general manager and superintendent of the Trimfit Hosiery Mills, recently started up at Philadelphia by Kramer Bros.

John W. Geary, Jr., for the last 11 years a general partner in George H. McFadden & Bros., New York cotton merchants, has joined American Viscose Corp.'s sales department to concentrate on rayon staple fiber.

Robert M. McCrary has been appointed superintendent of the Martinsville (Va.) Cotton Mills.

J. E. Stone has been appointed assistant superintendent of Aragon-Baldwin Cotton Mills, Rock Hill, S. C. He was formerly overseer of spinning and twisting at a unit of the same company at Whitmire, S. C.

Dillon Poston has been promoted to overseer of weaving at Pee Dee Mills, No. 2 unit, Rockingham, N. C.

W. L. Sibley has become assistant superintendent of San Antonio Cotton Mills, Southton, Tex.

H. C. Yates has become chief engineer and superintendent of the mechanical department of Dallas (Tex.) Cotton Mills.

A. D. Martin has become overseer of weaving at Balfour (N. C.) Mills. He was formerly of Calhoun Falls, S. C.

Charles S. Johnson, superintendent of Assabet Mills of American Woolen Co., Maynard, Mass., has resigned to accept a position with Hayward & Schuster Co., East Douglas, Mass.

F. E. Darby has resigned his position with Monroe (Ga.) Mills, and has become overseer of weaving at Kendall Co., Addison unit, Edgefield, S. C.

Bernard D. Shaw, formerly with Whittier Mills Co., Chattahoochee, Ga., has become overseer of carding at the Bevelle unit of Avondale Mills, Alexander City, Ala.

J. B. Talbert has been made assistant to superintendent of Blue Ridge Rayon Mills, Altavista, Va. He was formerly with Cliffside Mills, Cliffside, N. C.

Sloan Alexander has been promoted to assistant superin-

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The Positive Anti-Mildew Treatment

Heavy rainfall does not diminish the effectiveness of the treatment when you NAPENIZE canvas products for positive anti-mildew protection.

Because the chemical compound used has a physical affinity for the cloth, it does not "wash off."

Many processors now NAPENIZE because the treatment actually assures enduring protection and is low in cost. The certainty of longer life gives the treated canvas a strong selling advantage.

Complete information on this positive anti-mildew treatment is available. Write Dow today.

DOW

Working with you for America

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York City, St. Louis, Chicago, San Francisco, Los Angeles, Seattle

WITH "STAR" SILICATE OF SODA

Bleachers and finishers pick these three as outstanding savings:

1. No cloudy bleach baths. Star Silicate is brilliantly clear.

2. First quality goods. Star's correct and uniform alkalinity insures easier control.

3. Longer life bleach baths. Star's purity and stability are strictly guarded.

There are other ways to save with PQ Silicates and we'll gladly cooperate with data and samples. Write us now.

STAR BRAND

PHILADELPHIA QUARTZ CO.

General Offices and Laboratory: 125 S. Third St., Phila., Pa.
Chicago Sales Office: 205 W. Wacker Drive. Stocks in 65 cities.
Sold in Canada by NATIONAL SILICATES LTD., Toronto, Ont.

SILICATE OF SODA

SAVES MONEY

"3-IN-ONE" OIL CUTS REPAIR COSTS ON SMALL EQUIPMENT PARTS

The A. S. BOYLE Company (DISTRIBUTORS) JERSEY CITY, N. J.

Correct lubrication, cleansing and protection of small moving parts of textile machinery is essential to efficient operation and quality production . . . and 3-IN-ONE Oil meets these requirements! Write for special Mill prices on 3-IN-ONE today!

"3-IN-ONE" OIL

NEWS ABOUT MEN

tendent of night work at Jordan Mills, Columbus, Ga.

W. T. Worrels has resigned his position with Glen Raven Cotton Mills, unit No. 2, Kinston, N. C. and has become superintendent of the Harden, N. C., unit of Ranlo Mfg. Co.

J. J. Snyder, for 15 years supervisor of the plant cafeteria of Old Hickory, Tenn., units of the rayon and cellophane divisions of E. I. du Pont de Nemours & Co., retired on May 1, under the company's plan. He has been succeeded by **Jack Seckman.**

Ernest Shumake, overseer of spinning at Georgia Duck & Cordage Mill, Scottdale, Ga., has resigned to accept a similar position with Fickett Cotton Mills, Whitehall, Ga.

Francis C. Thompson has resigned as superintendent of the shipping department of the Cliffside (N. C.) Mills Co., and has accepted a position in Charlotte, N. C.

Wade Hearn, loom fixer at Edna Mills, Reidsville, N. C., has been promoted to assistant superintendent.

Manuel Silva, secretary of the Yarn Finishers' Protective Association of New Bedford, Mass., was guest of honor at a testimonial banquet in honor of his having served 25 years as secretary-treasurer of the organization.

Henry Wilson has become overseer of weaving at Pell City, Ala., unit of Avondale Mills. He was formerly of Sylacauga, Ala.

S. L. Deane has become superintendent of San Antonio Cotton Mills, Southton, Tex.

J. E. Dunn has resigned his position with Guadalupe Valley Cotton Mills, Cuero, Tex., and has become night overseer of weaving at Gonzales (Tex.) Cotton Mills.

J. R. Jolly, overseer of spinning at Columbus, Ga., unit of Bibb Mfg. Co., has been promoted to employment manager.

George Lee, formerly of Starkville, Miss., has become overseer of carding at Hesslein & Co. (Bradford Mill), Prattville, Ala.

C. W. Reynolds has resigned his position with Morrillton (Ark.) Cotton Mills and become overseer of weaving at San Antonio Cotton Mills, Southton, Tex.

W. C. Frazier has been promoted to assistant superintendent of Pee Dee Mills, No. 2 unit, Rockingham, N. C.

T. F. Harding has resigned his position with Eastern Mfg. Co., Selma, N. C., and has become overseer of the spinning and winding departments, Nos. 1 and 2, at Bladenboro (N. C.) Cotton Mills.

G. B. Sessions has resigned his position with Martha Mills, Thomaston, Ga., and has become assistant superintendent of the gray goods unit of Ware Shoals (S. C.) Mfg. Co.

Hugh Midgehall has been placed in charge of dyeing for Otto Homuth & Sons Ltd., Preston, Ont., Canada. He was previously in charge of dyeing at Langley's Ltd., Toronto, Ont.

J. A. Smythe, overseer of weaving at Balfour (N. C.) Mills, has been promoted to assistant superintendent and vice-president.

J. A. Chasteen, formerly with Marion (N. C.) Mfg. Co., has become overseer of weaving at the Monroe (Ga.) Cotton Mills.

J. W. Wade has been appointed superintendent of the mechanical department of the Laurel (Miss.) Mills, succeeding **C. A. Keown,** retired.

J. C. Holt has resigned his position as overseer of carding at Atlantic Cotton Mills, Macon, Ga., and has accepted a similar position with Winston Mill, Banning, Ga.

J. A. Burt has become night superintendent of Laurel (Miss.) Mills.

Raymond J. Foster, Old Hickory, Tenn., manager of the theater there for E. I. du Pont de Nemours & Co., Inc., has been elected editor of *Rayon Yarns,* Du Pont's monthly publication.

John D. Clark, for a number of years in charge of the Chicago office of Chatham Mfg. Co., Elkin, N. C., has been made a director of the company.

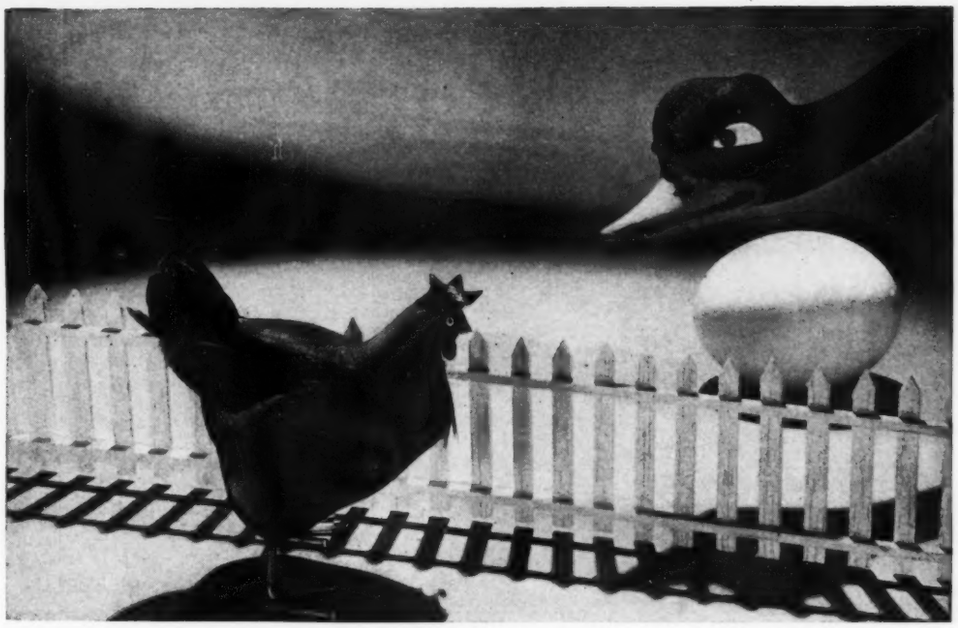
L. W. Brown, of Cherokee Falls, S. C., has become office manager of Martel Mills Corp., Mercury unit, Charlotte, N. C.

J. B. Talbert has resigned his position with Cliffside (N. C.) Mills, and become assistant to superintendent of Blue Ridge Rayon Mills, Altavista, Va.

P. L. Piercy, formerly connected with Firestone Cotton Mills, Gastonia, N. C., has accepted position of superintendent of Algodon Mfg. Co., Bessemer City, N. C.

M. D. Collins has become overseer of weaving at Plymouth Mfg. Co., McColl, S. C. He was formerly of Prattville, Ala.

Henry Lanier is now superintendent of Eastman (Ga.)



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Progressive mills today are obtaining better warps, at a considerable saving of time and money, with

AMYLEX

—the Modern

SLOW CONGEALING STARCH PRODUCT

Made Expressly for Warp Sizing!

- Strong binding power
- Cooks in 30 minutes
- Penetrates and coats the yarns
- Smooth yarn surfaces
- Reduces shedding
- Ensures excellent weaving
- Simplifies size preparation—just use alone with water for most yarns and fabrics.

We will gladly send you, on approval, enough for a trial.

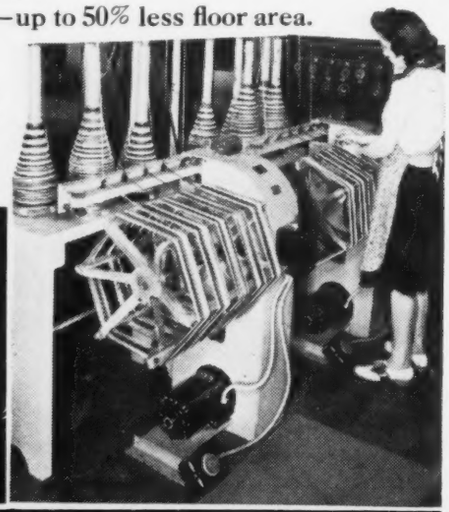
NATIONAL STARCH PRODUCTS Inc.

820 GREENWICH STREET, NEW YORK

Faster Skein Reeling plus Savings with FIDELITY TWIN-UNIT SYSTEM

Five Outstanding Advantages:

1. Easier, lighter work for operator—no high lifting.
2. Greater output per hour—30 to 50 seconds doffing and clipping cycle.
3. Close control of skein weight and yardage.
4. Greater flexibility for changes in production, dye lots, yarns, etc.
5. Space saving—up to 50% less floor area.



These five and ten more advantages described in Bulletin 3909 on FIDELITY Skein Reeling Machines. Write for it.

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Braiders
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AIR CONDITIONING ENGINEERS

HUMIDIFYERS
ATOMIZERS
UNIT SYSTEM
AIR FILTERS

to the
TEXTILE INDUSTRY
for 25 Years

Hundreds of installations in all types of textile mills in the U. S. and many foreign countries

Bahnson System
AIR CONDITIONING ENGINEERS
POSITIVE CIRCULATION LOWER OPERATING COST

THE BAHNSON CO.
Winston-Salem, N.C.

Heads set flush with machine surfaces. No sharp edges or slots to burr and pull threads; screws are chamfered at the point, outside edge of head and top edge of socket. The internally operated hex key sets the screw quickly and *tightly* without slippage. Samples supplied to your specifications.

THE ALLEN MANUFACTURING COMPANY
Hartford, Connecticut, U. S. A.

NEWS ABOUT MEN

Cotton Mill, having been promoted to this position.

M. C. Corn has resigned his position with Pisgah Mills, Brevard, N. C., and become overseer of spinning, twisting and winding at Green River Mills, Tuxedo, N. C.

A. F. Garrison, who has been superintendent of Hartwell Mills, No. 2, Toccoa, Ga., has been appointed general manager of Hartwell Mills, with units at Hartwell, Ga., and Toccoa.

Vester Brooks has become assistant superintendent of Georgia-Kincaid Mills Nos. 2, 3 and 5, Griffin, Ga.

W. D. Knox has been appointed assistant superintendent of Ninety-Six (S. C.) Cotton Mills. He was promoted from overseer of weaving.

Allen J. Dennis is the newly appointed superintendent of No. 1 unit of Bibb Mfg. Co., Macon, Ga.

J. L. Thompson has resigned his position with Brookside Mills, Knoxville, Tenn., and has become overseer of carding at Chadwick-Hoskins Mill, No. 5 unit, Pineville, N. C.

Vester Brooks has become assistant superintendent of Gainesville (Ga.) Cotton Mills.

Frank Tucker is now superintendent of Cheraw (S. C.) Hosiery Co.

Hubert Stubbs has become athletic director for the Bibb City unit of Bibb Mfg. Co., Macon, Ga.

D. H. Cauble has become superintendent of Glen Raven Cotton Mills, No. 2, Kinston, N. C.

B. P. Robinson has become secretary of Deep River Mfg. Co., Randleman, N. C., newly organized.

Grover C. Batson, formerly supply clerk at American Spinning Co., Greenville, S. C., has been promoted to superintendent of the warehouse.

P. D. Hawkins has resigned his position with Chadwick-Hoskins Co., Pineville, N. C., unit, and become overseer of carding and spinning at Rockfish Mills, No. 2 unit, Hope Mills, N. C.

A. W. Lee has been appointed overseer of night carding and spinning at Rockfish Mills, Cumberland, N. C. He was formerly with the company's unit at Hope Mills, N. C.

Harry Belk has resigned his position as outside overseer at American Spinning Co., Greenville, S. C., and has accepted a similar position with Borden Mills, Kingsport, Tenn.

Obituary

George P. Ray, 65, who retired about two years ago as vice-president and general sales manager of Riverside & Dan River Cotton Mills, New York, but who remained as a director died May 15. Mr. Ray's business life was spent in the Worth Street district, beginning as office boy with Joseph T. Low and going with Converse, Stanton & Co., and Cone Export & Commission Co., until in 1904 he joined Riverside & Dan River Cotton Mills. He maintained his headquarters at Danville from 1912 to 1929. He had been a director of the Cotton-Textile Institute and of the Association of Cotton Textile Merchants of New York.

James E. Rankin, Sr., president for 34 years of the Henderson Cotton Mills, Louisville, Ky., and last surviving participant in the Mississippi River steamboat race in 1870 between the Natchez and the Robert E. Lee, died May 14.

Benjamin Pomeroy, 64, treasurer of Mason Silk Co., Winsted, Conn., died May 1.

Harry C. Ulrich, 73, Fleetwood, Pa., president of Fleetwood Craftsmen, Inc., died May 5.

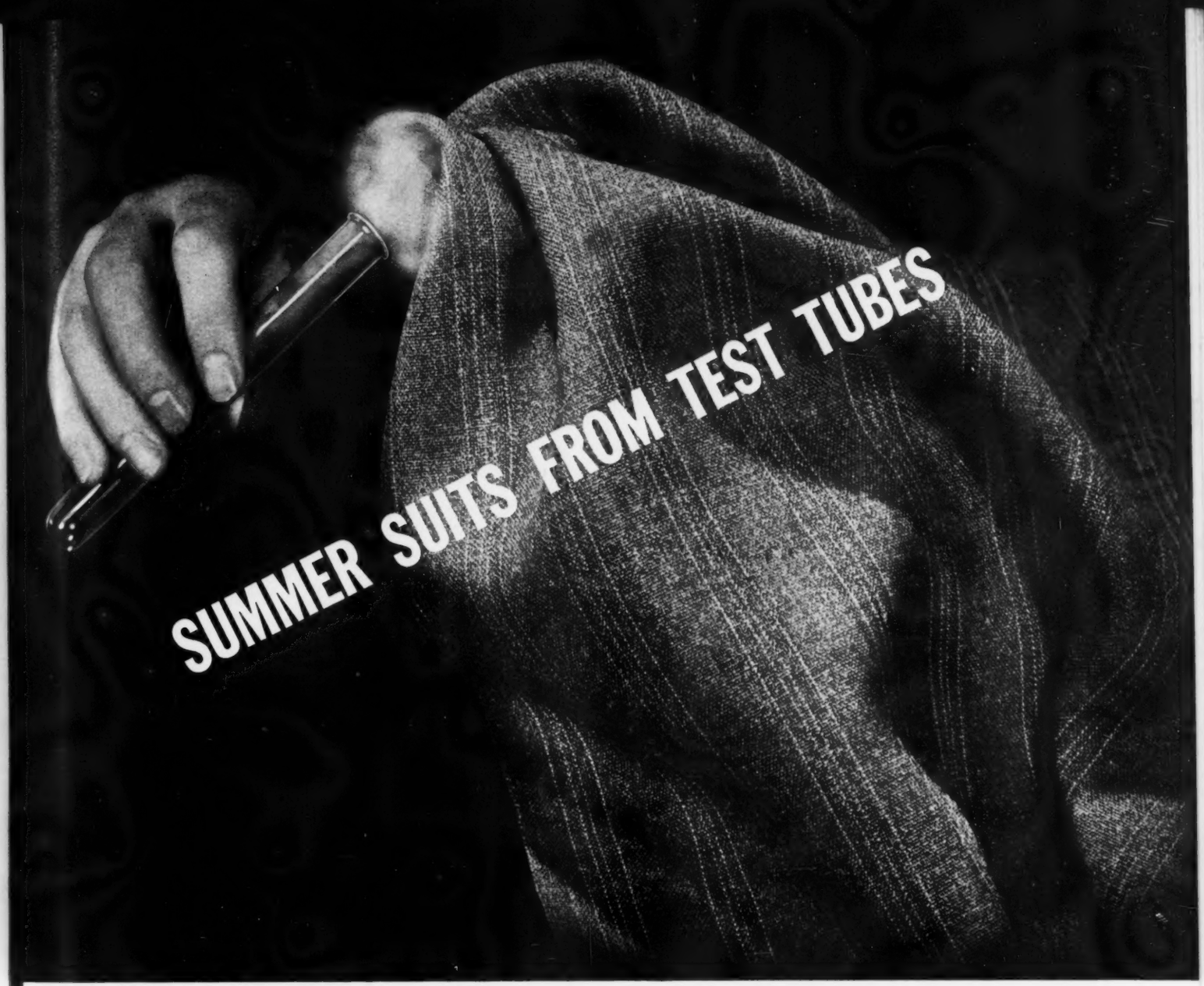
Herman Cohen, 81, founder and president of the H. & A. Cohen Hosiery Co., Indianapolis and Cleveland, O., died recently.

Roy A. Thrower, 59, one of the organizers of Stowe Spinning Co., Belmont, N. C., in 1924, who served as superintendent of carding at the mill from the time its was organized until he retired recently, died last month.

Henry Dabney Jarman, 88, who for 59 years was connected in an executive capacity with Charlottesville (Va.) Woolen Mills, died at Charlottesville, May 17. He had retired six years ago.

Harry E. Friend, advertising manager of Westminster, Ltd., New York, since 1925, died recently.

Eugene Holbrook, 60, for the last 36 years with the New York office of George Woods Sons & Co., died May 21.



"Ten dollar Summer Suits that will last five years"... yesterday it was a rash forecast. Today mills are weaving mixtures of Spun Rayon with other synthetic and natural fibers in interesting new patterns.

Remember, whatever the fiber or fabric you are dyeing, National Technical Service stands ready to help you with a color formula for an exact match at lowest cost under your own mill conditions.

WIRE, WRITE OR PHONE FOR FORMULAS AND COLOR STOCKS

NATIONAL ANILINE & CHEMICAL COMPANY, INC.

40 RECTOR STREET NEW YORK, N. Y.

BOSTON	150 Causeway St.	SAN FRANCISCO	517 Howard St.	NEW ORLEANS	Masonic Temple Bldg.
PROVIDENCE	15 Westminster St.	CHARLOTTE	201-203 W. First St.	CHATTANOOGA	James Bldg.
CHICAGO	357 W. Erie St.	GREENSBORO	Jefferson Standard Bldg.	PORTLAND, ORE.	730 West Burnside
PHILADELPHIA	200-204 S. Front St.	ATLANTA	140 Peachtree St.	TORONTO	137-145 Wellington St., W.

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CURRIER & COMPANY, INC.

DIRECT SALES AGENTS

AVONDALE MILLS
of Alabama
Double-carded single knitting yarns
Carded weaving yarns (single and ply)
4s to 30s

FITCHBURG YARN COMPANY
Fitchburg, Mass.
Fine combed American and
Sakellarides — 10's to 120's
Single and all plys

COWIKEE MILLS
Alabama
carded (single and ply)
knitting and weaving yarns
4s to 30s

WATATIC SPINNING MILLS, INC.
Fitchburg, Mass.
Combed knitting twist cones or
tubes—16/1 thru 50/1

NASHUA MFG. CO.
Nashua, N. H.
Slashed warps on loom beams

ALL PUT-UPS

BOSTON NEW YORK PHILADELPHIA
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PROVIDENCE — Call Enterprise 2300
(Private line to Boston Office)

DAWSON CLAY
AND
FRANKLIN CLAY
for
Soft Smooth Finishes

Exceptionally smooth white inerts particularly suitable for textile work and back-filling.

Samples are yours for the asking.

UNITED CLAY MINES
CORPORATION
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Improved Testing

*Scott Testers embody exclusive improvements which enable users to obtain results of greater scope and precision.

SCOTT TESTERS

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HENRY L. SCOTT CO. Providence, R. I.

NEWS ABOUT MEN

Ernest J. Lefort, 67, for the last 20 years a technician for Ciba Co., Inc., and most recently with that firm's southern branch office at Charlotte, N. C., died at his home in Greensboro, N. C., May 9. He was for 15 years superintendent of dyeing for the White Oak Cotton Mills of the Cone group, Greensboro, N. C., and was recognized as one of the country's authorities on the matter of indigo dyeing. He began his textile career in 1895 with the Otis Bros. Co., Ware, Mass.

Ernest J. Lefort

Caleb Jones Milne, Jr., 80, who was a partner in the firm of C. J. Milne & Sons from 1885 to 1924, died in Philadelphia May 23.

Charles B. Van Nest, 70, retired general sales manager of Utica (N. Y.) Knitting Co., died at Maplewood, N. J. May 9. He was with the Utica firm for 40 years.

Charles B. Nolte, 55, president since 1935 of the Crane Co., Chicago, Ill., died recently.

Perry Walton, of Walton Advertising & Printing Co., Boston, Mass., and author of "The Story of Textiles," died in Milton, Mass., May 6.

Frank Maas, 78, retired secretary of the former National Silk Dyeing Co., died at Paterson, N. J. May 14.

Thomas Reilly, 55, of Golding Bros., New York, died recently. He joined Golding in 1929, and for the previous 15 years was with Imperial Printing Co., Providence, R. I.

Ernest O. Nichol, 60, New England representative for Joshua L. Baily & Co., and a director of the Boston Association of Textile Salesmen, died in Concord, Mass., recently.

Robert M. Thurnauer, 40, vice-president of Westminister Hosiery Co., New York, died last month.

Alexander Livingstone, 78, for many years prominent in the Boston wool trade, at one time in charge of wool buying for American Woolen Co., and formerly a partner in the Boston firms of Benedict & Livingstone, and Denney, Rice & Benedict, died at Watertown, Mass., on May 18.

L. H. Stringer, 72, a member of the board of directors of Woodside Cotton Mills, Greenville, S. C., died recently.

Dabney Hull Crump, 68, Memphis, Tenn., cotton man, died May 2. For many years he was treasurer of the Southern Cotton Shippers Association. He and his brother, Frank Crump, in 1896 founded the cotton firm of F. M. Crump & Co.

James Earl Whitin, 61, chairman of the board of M. J. Whittall Associates, Worcester, Mass., who retired as active manager recently, died at North Uxbridge, Mass., May 31. He operated James E. Whitin Cotton Mills from 1905 until he joined Whittall organization in 1923.

Mrs. Marguerita Mergentime, textile and industrial designer, and chairman of the home-furnishing division of the Fashion Group, Inc., New York, died May 27. She designed the patriotic tablecloth reproduced on the May, 1941, front cover of TEXTILE WORLD.

J. L. McKnight, 55, assistant secretary of B. F. Goodrich Co. and head of the firm's legal department, died May 15 at his home in Hudson, Ohio, near Akron.

Patrick McGarity, 59, superintendent of the Greenville, S. C. unit of Mills Mill for the last 19 years, died May 3.

R. Nesbutt Westmoreland, overseer of cloth room of Spartan Mills, Spartanburg, S. C., for 12 years, died recently.

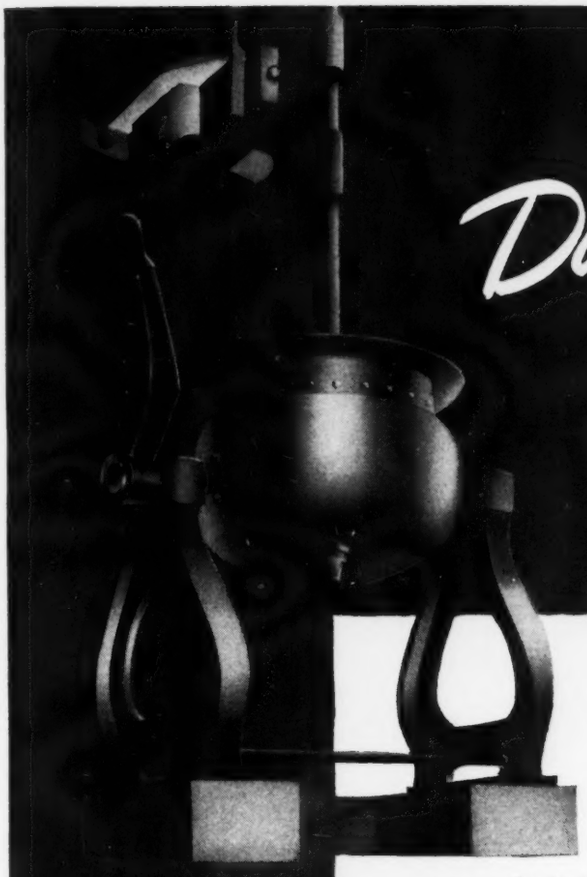
H. S. Lovern, 76, for about 30 years superintendent of the Walker County Hosiery Mills, Lafayette, Ga., died recently.

J. W. McMorran, 62, for many years head dyer with Penmans' Ltd., St. Hyacinthe, Que., Canada, died recently. He was with the firm for over 40 years.

Edward Hartman, 74, superintendent of F. G. Hartman Silk Mills, Danville, Pa., died May 21.

Victor Gera Swain, 46, superintendent for 16 years of Bay Division of Parke Davis & Co., Bridgeport, Conn., died recently at his home in Stratford.

Robert Russell, 71, former superintendent for seven years of Acushnet Mill, New Bedford, Mass., died at his home there recently.



Du Pont vat colors for printing

PRODUCE SHADES OF OUTSTANDING FASTNESS AND BEAUTY

ADVANCES in styling and design—ultra-modern processing techniques—the use of fast vat colors—have been largely responsible for the present high degree of perfection in the art of textile printing.

The Du Pont Company has been manufacturing vat colors since 1917. It offers the printer quality dyes possessing great brilliance combined with maximum fastness. This is possible through the refinement of chemical manufacturing processes resulting in greater purity of color and the necessary physical properties to assure the best results. Du Pont vat colors are finely divided, free from grit, specking and foaming.

Du Pont offers a comprehensive range sold under the registered trade-marks of: **"SULFANTHRENE"** . . . . *thioindigoid type*

"PONSOL" . . . . . *anthraquinone type*

"LEUCOSOL" . . . . . *anthraquinone type possessing advantageous printing characteristics*

The LEUCOSOL colors are particularly suited to textile printing. Improved solubility of the leuco compounds makes brighter, cleaner, prints possible. Very good penetration insures the best possible fastness. Physical characteristics are designed to obtain optimum results. The pastes do not dry out or settle, thus eliminating speckiness. These types are recommended where the fastest anthraquinone vat colors are required.

For quality in color . . . there is nothing finer than a vat dye!

DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & COMPANY (INC.)
Organic Chemicals Dept., Dyestuffs Division, Wilmington, Delaware

New Textile Laboratory

AT YOUR SERVICE!

THESE are photographs of the interior of the modern, efficient new laboratory which the Corn Products Sales Company has established at Greenville, S. C., for testing and experimental work on textiles.

You are cordially invited to call on the resources of this laboratory! Our technicians will help you work out any WARP SIZING, FINISHING or other textile problems.

CORN PRODUCTS SALES COMPANY

17 BATTERY PLACE, NEW YORK, N. Y.

Textile Offices: Greenville, S. C. • Greensboro, N. C. • Atlanta, Ga.
Spartanburg, S. C. • Birmingham, Ala. • Boston, Mass.

TEXTILE MILL NEWS

Cotton Mill News

Acme Cotton Products, Inc., South Killingly, Conn., has awarded contract for a 2-story addition, 55x100 ft.. to Medbury & Trowbridge, Putnam, Conn. Work is now underway.

Anchor Duck Mills, Rome, Ga., has asked bids on general contract for two-story addition, 55x100 ft., estimated to cost about $40,000, with equipment. Robert & Co., Atlanta, Ga., are architects and engineers.

Ann Mfg. Co., Granite Quarry, N. C., has been incorporated with an authorized capital of $10,000, by J. H. Lyerly, Louise Baker Lyerly, and Charles McCanless.

Aragon Cotton Mills, Rock Hill, S. C., will complete construction of a large addition this month to house machinery installed under the mill's expansion program.

Canadian Cottons Ltd., Montreal, for fiscal year ended Mar. 31 reports net profit of $551,811 compared with $585,831 for previous fiscal year.

Carolina Mills, Inc., Maiden, N. C., plans construction and equipping of a modern community building for the operatives of the mills and their families.

Dominion Yarns Ltd., Welland, Ont., has installed 10 Whitin long-draft spinning frames with 252 spindles each. Vacuum strippers were recently installed on each of the 42 cards.

Dover Mill Co., Shelby, N. C., has constructed an addition to the office to provide more office space and to facilitate a testing laboratory.

Fairfax Mills, Lanett, Alabama, branch of the West Point (Ga.) Mfg. Co., completed new office building early in May, containing private offices for five officials.

Farquhar & Co., Inc., Greenville, S. C., with a capital of $50,000, is a newly organized textile company which will manufacture cotton yarns, cloths and all kinds of textiles. J. S. Farquhar is president and treasurer, with Donald McDonald, vice-president and secretary.

Marshall Field & Co., Inc., Fieldale, Va., has asked bids on general contract for one-story addition to local towel mill, reported to cost over $60,000, with equipment. Robert & Co., Atlanta, Ga., are architects and engineers.

Fitzgerald (Ga.) **Cotton Mills** are constructing a new concrete-and-steel machine shop. All the machine shop equipment will be installed in this building, and additional looms will be installed in the space made available by the removal of the machinery.

Frieda Mfg. Co., Kings Mountain, N. C., recently organized, has completed installation of about 6,000 spindles and auxiliary equipment in former Mountain View Mill, of Textiles, Inc., near Kings Mountain, and will begin production of fine combed yarns. Plant had been idle for about two years and machinery had been removed to another mill of previous owner in same district.

G. & P. Thread Corp., 60 Woodbine St., Wollaston, Mass., has been organized with capital of 1,000 shares, to operate a local mill. Oscar W. Peterson is president; and Milton H. Gove, treasurer.

Irene Cotton Mills, Taylorsville, N. C., formerly Carter Mills No. 2, recently purchased by Robert Goldberg and associates of Gastonia, N. C., has installed new equipment including 5,000 new twister spindles and two new winders. The office building has been renovated, and a building which was formerly used as a warehouse has been equipped to be operated as part of the mill.

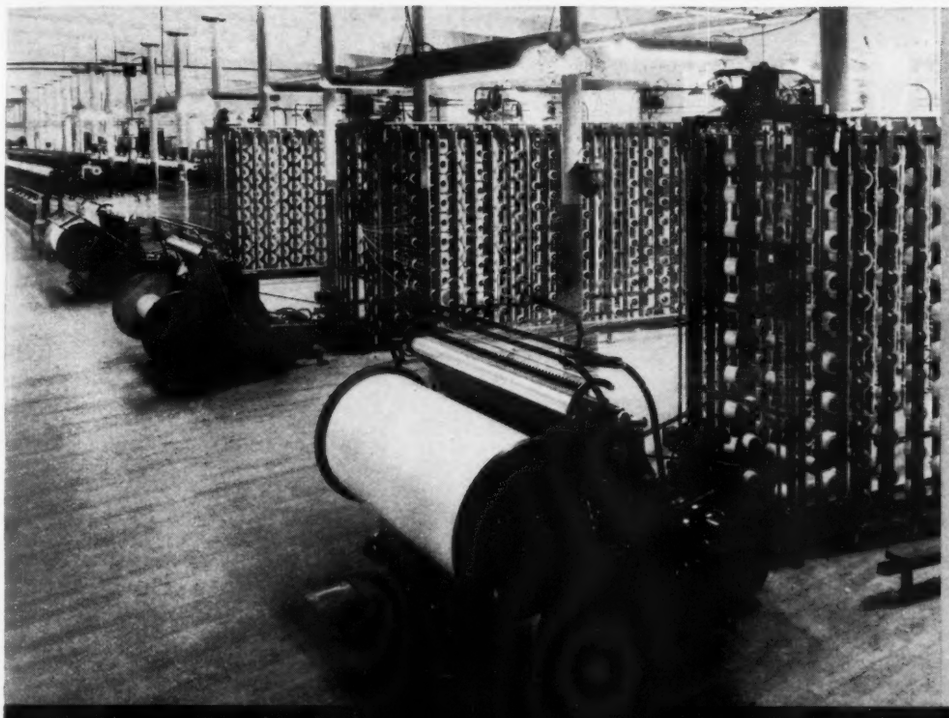
Laurens (S. C.) **Cotton Mills** has sold to its employees 502 of the company-owned houses.

Minneola Mfg. Co., Gibsonville, N. C., is installing new machinery in mill, including 48 new Whitin spinning frames; 10 Interdraft changeovers in carding department; and a number of new drawing frames. Improvements also have been made in present equipment. Mill capacity will be increased.

Montgomery (Ala.) **Cotton Mills,** newly incorporated, will operate the plant formerly owned by Selma Mfg. Co. The company was incorporated by D. H. Morris, Jr., Joel E. Johnson, D. H. Morris, 3rd., Charles E. Estes and Mabel B. Estes, and will produce cotton bagging fabrics.

Pepperell Mfg. Co., Lindale, Ga., has completed installation of latest package-dyeing machinery, furnished by Gaston County Dyeing Machine Co., Stanley, N. C.

Pepperton Cotton Mills,



SUPER-SPEED WARPERS

NEW MACHINES for NEW ENGLAND

The Barber-Colman System of Spooling and Warping

These pictures were made in one of TWELVE NEW ENGLAND MILLS, all manufacturing fine goods, which have recently installed Barber-Colman Spooling and Warping equipment.

AUTOMATIC SPOOLERS

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

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APPROVED TESTING INSTRUMENTS
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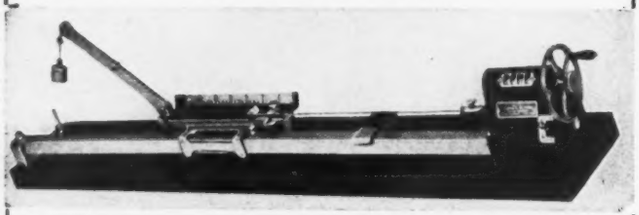


Twist Tester with re-set counter, tension control and take-up registering device.
MADE FOR HAND OR MOTOR DRIVE
We also have a 10" single Twist Testing attachment for either.

"YOU CAN COUNT ON WAK COUNTERS"

They are

RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write—Phone—Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

MATHEWS COTTON MILL, Greenwood, S. C., recently installed the Link-Belt conveyor-type truck-haul shown at right for handling 500-lb. bales of cotton goods from storage at ground level, up a 30-ft., 20° slope to shipping platform. An endless chain with pusher links at proper intervals engages the axle of the truck. The trucks travel at the rate of 50 ft. per min. Power is supplied by a 2-hp. motor. The attendant merely guides the truck, and usually stands on one foot on the conveyor chain, letting himself be hauled up also.

Jackson, Ga., are erecting one-story addition, for which general contract was let to Henry B. McKoy Building Co., Greenville, S. C. Cost about $35,000 with equipment. J. E. Sirrine & Co., Greenville, are architects and engineers.

Royal Mfg. Co., East Grand Ave., Rahway, N. J., plans early removal of mill to another location, where increased capacity will be carried out. Present plant, on a 5-acre tract, has beeen sold to Merck & Co., Inc., manufacturing chemists, with factory on adjoining property.

Sears, Roebuck & Co. have made inquiries in Huntsville, Ala., for a site for a weaving mill to be operated by a company which will sell exclusively to Sears. A 30,000 ft. space is required for this enterprise.

Southern Mills, Inc., Lincolnton, N. C., housed in the former Excell Mills building, has completed installation of new machinery.

Superior Felt & Bedding Co., Chicago, Ill., has let general contract to Poirot Construction Co. for improvements in buildings at DeKalb, Ill., to be occupied for mill. Cost reported over $50,000.

Watchorn & Co., Ltd., Merrickville, Ont., plan one-story addition, for which bids will be asked soon on general erection contract. Cost reported close to $50,000, with equipment.

West Point (Ga.) **Mfg. Co.** has begun organization of a recreation department for its units in five Alabama towns. Robert A. Turner will be director of the project with an assistant director for each town.

Wool Mill News

Sawyer Mill of American Woolen Co., Dover, N. H., suffered loss estimated at $30,000 from an explosion in the power plant on June 2. The mill's 225 employes are out of work for an indefinite period until repairs can be made. FBI agents began an investigation of possible sabotage.

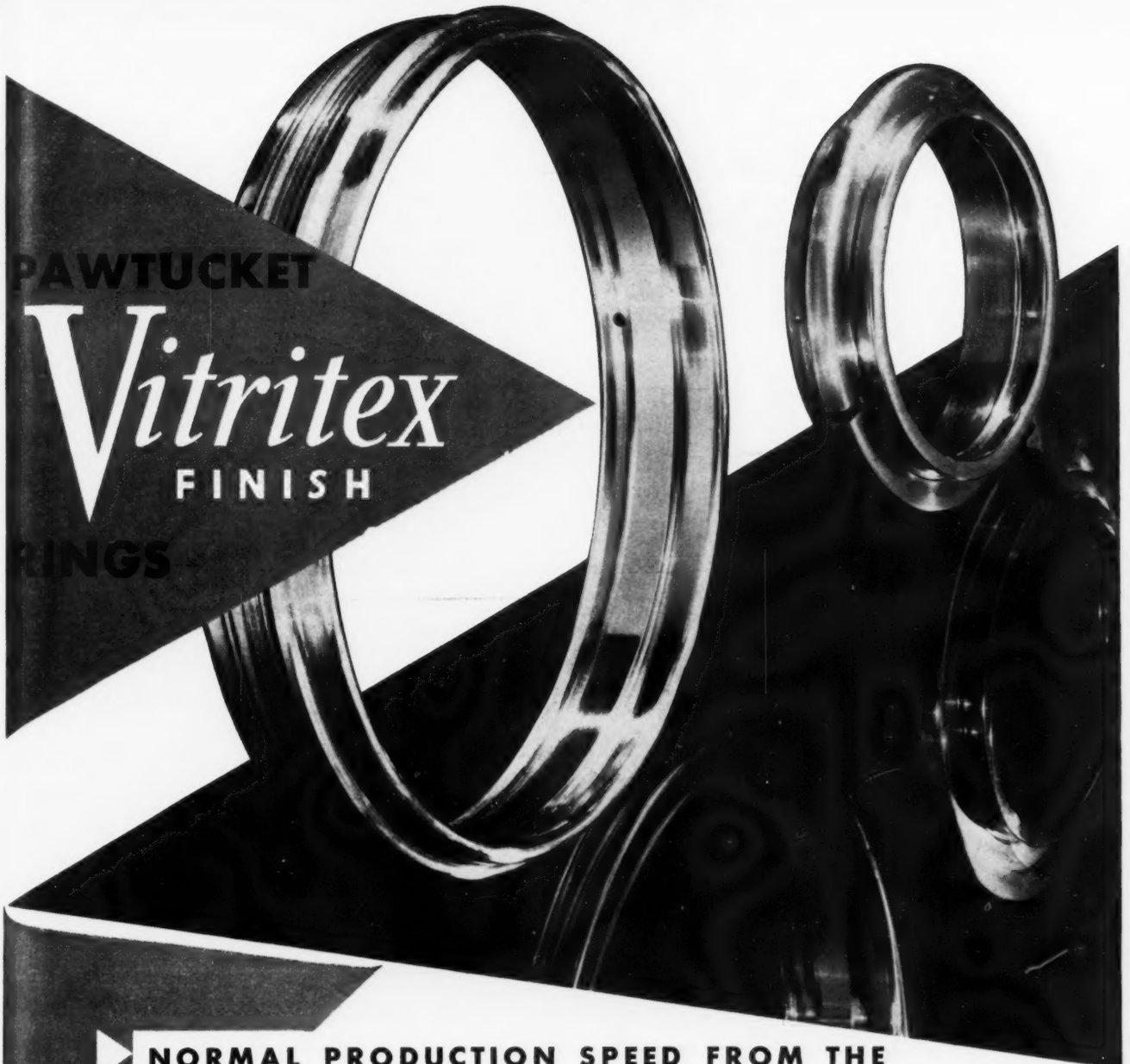
Alderman Top Mfg. Co., Holyoke, Mass., has submitted an offer to Dewitt C. Mallory of Springfield, receiver of Farr Alpaca Co., to buy No. 3 top mill of the Farr, including land, building and machinery, for $50,000 to be paid $5,000 in cash and the balance in installments.

W. J. Dickey & Sons, Inc., Oella, Md., has awarded general contract to Frantz Construction Co., Baltimore, Md., for one-story addition to finishing mill, reported last month.

Dominion Woolens & Worsteds Ltd., has awarded contract for oil storage facilities at Hespler, Ont., to Ball Bros., Ltd., Kitchener, Ont. This wool manufacturer reports net profit for 1940 of $229,797 compared with $113,934 in 1939. War business has been 40% of its sales.

Thomas Kay Woolen Mill Co., Salem, Ore., has let general contract to Barham Brothers, Salem, for two-story and basement addition, 36x60 ft. Cost about $40,000, with equipment. Lyle P. Bartholomew, Salem, is architect.

Kulin Waste Co., Worcester, Mass., reports the sale of its mill at Gilsum, N. H., to the Colonial Woolen Mills, Cleveland, Ohio, for defense work. The mill is a 6-set, 36-



NORMAL PRODUCTION SPEED FROM THE MOMENT THEY ARE INSTALLED . . .

Pawtucket Vitritex Rings do not have to go through an expensive, traveler-wearing, breaking-in period when they're new. From the moment they are installed your frames operate at their normal speed and efficiency.

Pawtucket Rings are known for their precision workmanship, durable glass-smooth finish, easy starting qualities. Travelers last longer and run smoother and better on these rings . . . a fact which many spinning-room overseers have found from experience.

We will be glad to arrange a trial installation . . . or furnish without cost or obligation sufficient samples for your own test purposes.

PAWTUCKET SPINNING RING COMPANY

(Subsidiary of Saco-Lowell Shops)

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in. loom plant. It was bought by Kulin Waste Co. in 1931, which operated it until 1935, when it was leased to the Gordon Woolen Co., Newport, N. H., and run until 1939. Under the new set-up about 300 are to be employed on 3-shift operation.

Lewis, Ltd., Truro, N. S., hat and cap manufacturers, are now producing woolen yarns in a plant detached from their other activities.

Lima (Ohio) Woolen Mills Co., closed for about a year, were reopened with termination of receivership proceedings last month.

Forest-Pondicherry Co. has leased its woolen mill at Bridgeton, Me., idle for almost a year, to Joseph R. Loper of the Royal Worsted Co., Sabbatus.

Putnam (Conn.) Worsted Co. has recently moved to larger quarters and has installed additional equipment for the production of worsted cloth.

Rayon & Silk Mill News

American Viscose Corp., New York, reports net profit of $1,913,772 for first quarter of 1941, compared with $2,067,414 for corresponding quarter of 1940. Sales were $17,028,803, compared with $13,871,955 for 1940.

Celanese Corp. of America, through a subsidiary, has acquired the King Cotton Mills Corp., Burlington, N. C., spinners of cotton yarns and rayon blends.

Celanese Corp., New York, has preliminary plans for new branch mill in vicinity of Verona (Augusta County), Va., where tract of close to 150 acres of land has been acquired. Plant will comprise several large one and multi-story buildings, with auxiliary mechanical structures. Plant will weave fabrics. Cost of initial unit reported at $500,000.

Cleveland Cloth Mills, Shelby, N. C., has installed 72 new Crompton & Knowles looms.

Collins & Aikman Corp., Bristol, R. I., has let general contract to Turner Construction Co., New York, for two-story addition to local mill, 170x185 ft., to be known as Mill J, reported to cost over $225,000, with equipment, instead of smaller sum, previously noted.

E. I. du Pont de Nemours & Co., Inc., Rayon Division, Wilmington, Del., has taken bids for new one and multi-story addition to mill at Amphill, Richmond, Va., reported to cost over $250,000, with equipment. The company has also awarded contract for construction of 50 new homes for operatives at the new unit in Martinsville, Va.

Dominion Textile Co. Ltd., with head office in Montreal, has sold to the Dominion Government its former cotton and rayon cloth plant in Verdun, Que. Machinery and equipment in the plant was moved to the Sherbrooke branch and other mills, six years ago. The buildings, containing 1,205,250 sq. ft. of floor space, were secured by the Government for $675,000.

LaFrance (S. C.) Industries, manufacturing plush and upholstery materials, has asked for approval by the Federal District Court in Philadelphia, Pa., of a plan to move its plush weaving department from Philadelphia to its southern plant.

O.K.O. Plush Co., Hulmeville, Pa., completed about May 15 a third mill unit one-story, 53x140 ft. Addition will provide space for 12 more looms for plush weaving. Operations are expected to start in the addition about June 1.

Pacific Mills, Boston, Mass., in connection with the consolidation of all its finishing activities at Lyman, S. C., will discontinue its drapery and rayon dress goods lines at the end of the present season.

Tubize Chatillon Corp., New York, N. Y., has begun erection of superstructure for one-story addition, 100x800 ft., to mill at Rome, Ga., for which general contract recently was let to A. K. Adams & Co., Atlanta, Ga. Cost estimated about $1,400,000, with machinery. Robert & Co., Atlanta, are architects and engineers. Tubize reports net profit of $459,638 for first quarter of 1941 compared with $333,638 for similar period of 1940.

Knitting Mill News

Adams-Millis Corp.'s plant at Kernersville, N. C., will be enlarged by a one-story addition, of brick and steel, to provide space for spreading out the present equipment.

Charles H. Bacon Co., Loudon, Tenn., is installing $100,000 worth of full-fashioned machinery suitable for manufacture of Nylon hosiery. The company also plans to install additional new ma-

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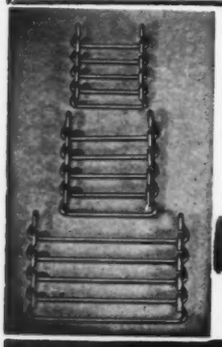

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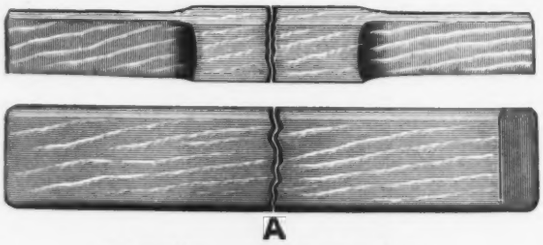

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chinery in its unit in Lenoir City, Tenn.

Bradley Knitting Co., Delavan, Wis., which in recent months has been attempting a reorganization, was declared bankrupt by Federal Judge F. Ryan Duffy at Milwaukee, on petition of Coleman & Brunner Co., a general creditor. Sale at auction was scheduled for late May.

J. C. Brown, Villa Rica, Ga., has completed installation of knitting machines and auxiliary equipment in local one-story industrial building, secured under lease, and will begin operation at once on socks.

Caldwell Knitting Co., Ltd., Calgary, Alta., is planning a new one-story branch mill at Vancouver, B. C., estimated to cost $60,000, with equipment.

Dolly Hosiery Co., Valdese, N. C., formerly housed in the Brickley Building on Columbo Street, has moved into the new building which it constructed on Highway No. 70, as previously noted.

Fox River Valley Knitting Co., Appleton, Wis., has begun erection of two one-story additions, 75 x 76 ft., and 40 x 75 ft., for expansion in main production division and warehouse, respectively. Erection contract was awarded recently to C. R. Meyer & Sons Co., Oshkosh, Wis. Cost reported close to $45,000, with equipment.

Hand Knit Hosiery Co., Sheboygan, Wis., has let general contract to Arthur Hummitzsch, Sheboygan, for one-story and basement addition, 40 x 65 ft., previously reported. Satre & Senescall, Sheboygan, are architects.

Hartnett Hosiery Mills, Inc., Dunn, N. C., was purchased for $1,400 at a receiver's sale by George L. Cannady and B. G. Braswell. The plant, valued at $10,000, is less than two years old. It will be operated in the future as the B. & G. Hosiery Mills.

Herbert Hosiery Mills of Canada, Ltd., Toronto, Ont., are erecting a second story addition over a portion of the mill for use as office space, at cost of $3,500. The parent firm is the Herbert Hosiery Mills of Norristown, Pa.

Knit-to-Fit Mfg. Co., Ltd., Montreal, Que., has begun superstructure for a five-story addition, 60 x 200 ft., for which general contract recently was awarded to A. F. Byers & Co., Ltd. It will cost over $125,000, with machinery. C. D. Goodman is architect.

Portage (Wis.) **Hosiery Co.** has rejected bids recently received for proposed one-story top addition, 60 x 118 ft., to existing two-story mill, and will hold project in abeyance.

Society Maid Hosiery Mills, Willow Grove, Pa., had its equipment sold at auction recently on piecemeal basis for $11,000. There were 17 42-gauge ff. machines.

Theme Hosiery Co., Los Angeles, Calif., has awarded contract for construction of an addition to its plant to be 27 x 94 ft. and to cost $5,500.

Whisnant Hosiery Mills, Hickory, N. C., has completed an addition, into which the boarding room has been moved, enabling the company to expand its finishing department. Company has expanded about 30% due to recent changes.

Processing Plant News

Chicago (Ill.) **Printed String Co.** has awarded contract to Carl E. Erickson Co., Inc., for two-story addition, 15 x 85 ft., for warehouse expansion. Cost about $30,000.

Davan Dyeing & Finishing Corp., West Warren, Mass., recently organized with capital of 5,000 shares, plans operation of local dye and finish mill. A. Z. Marchetti is president; Richard S. Woodbury is treasurer, both of West Warren.

Lowell Bleachery, Griffin, Ga., has begun construction of one-story addition, 50 x 210 ft., for which general contract was awarded recently to Newton Coal & Lumber Co., Griffin. Cost reported about $60,000, with equipment.

National Dyeing & Finishing Corp., Los Angeles, Calif., has been organized with a capital of $25,000. Directors are: A. V. Beenan, N. E. Halaby and James C. Greene. Corporation is represented by O'McIlveny & Myers, 433 South Spring street.

Renfrew Bleachery, unit of Brandon Corp., Travelers Rest, S. C., is installing new equipment in its power plant extension. This includes a boiler, stoker, automatic coal-handling equipment, etc.

Textile Dyeing & Finishing Co. has been absorbed by Textile Knitting Mills, 201 Weston Rd., Toronto, Ont., and has been reorganized as General Textile Dyers and Finishers, Ltd., 3030 Dundas St. W., Toronto, Ont.

United States Finishing Co., New York, reports consolidated net loss for 1940 of $262,644 compared with net loss of $68,284 in 1939.